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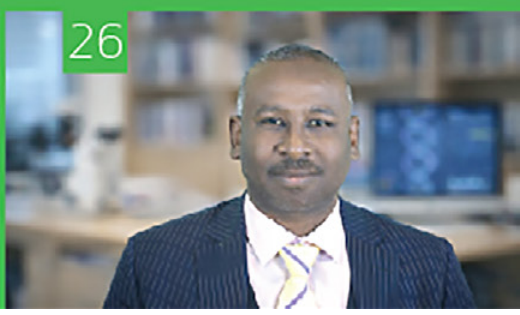


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Chairman's Message

Prof. Mohammed bin Fahad
Executive Editor

On behalf of the Zayed International Foundation for the Environment, it is my honour to congratulate His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, on his 20th accession anniversary. Under his inspirational leadership, His Highness has shaped Dubai into a beacon of innovation, progress, and unwavering ambition.

Through groundbreaking initiatives like the Dubai Clean Energy Strategy 2050, Dubai 2040 Urban Master Plan, and in line with the UAE Net Zero by 2050 initiative, His Highness has balanced rapid development with ecological stewardship to transform Dubai into a global role model for building resilient and sustainable future-focused cities.

This enduring commitment, deeply rooted in the visionary ideals of the late Sheikh Zayed bin Sultan Al Nahyan, continues to guide Dubai's journey towards a greener tomorrow. Following this legacy, the Foundation is organizing the 1st Dubai International Conference & Exhibition on Green AI: Artificial Intelligence for a Green Planet (DICEGAI 2026), the first of its kind in the region. This crucial gathering will explore the intersection of Artificial Intelligence and environmental sustainability, bringing global experts together to deliberate innovative strategies for our planet and its people.

Our objective is clear: to champion sustainable AI practices and explore how advanced technologies can actively contribute to environmental conservation across sectors. This resonates powerfully with the UAE and Dubai leadership's profound strategic vision, which views Artificial Intelligence as a cornerstone for realizing the nation's ambitious sustainability and environmental objectives.

We are proud to host DICEGAI 2026 in January as the UAE marks HH's 20th Accession anniversary. I join the nation in thanking and praying for His Highness's continued well-being and success in advancing Dubai's global standing as a hub for innovation and a leading model for future-centric sustainable development.

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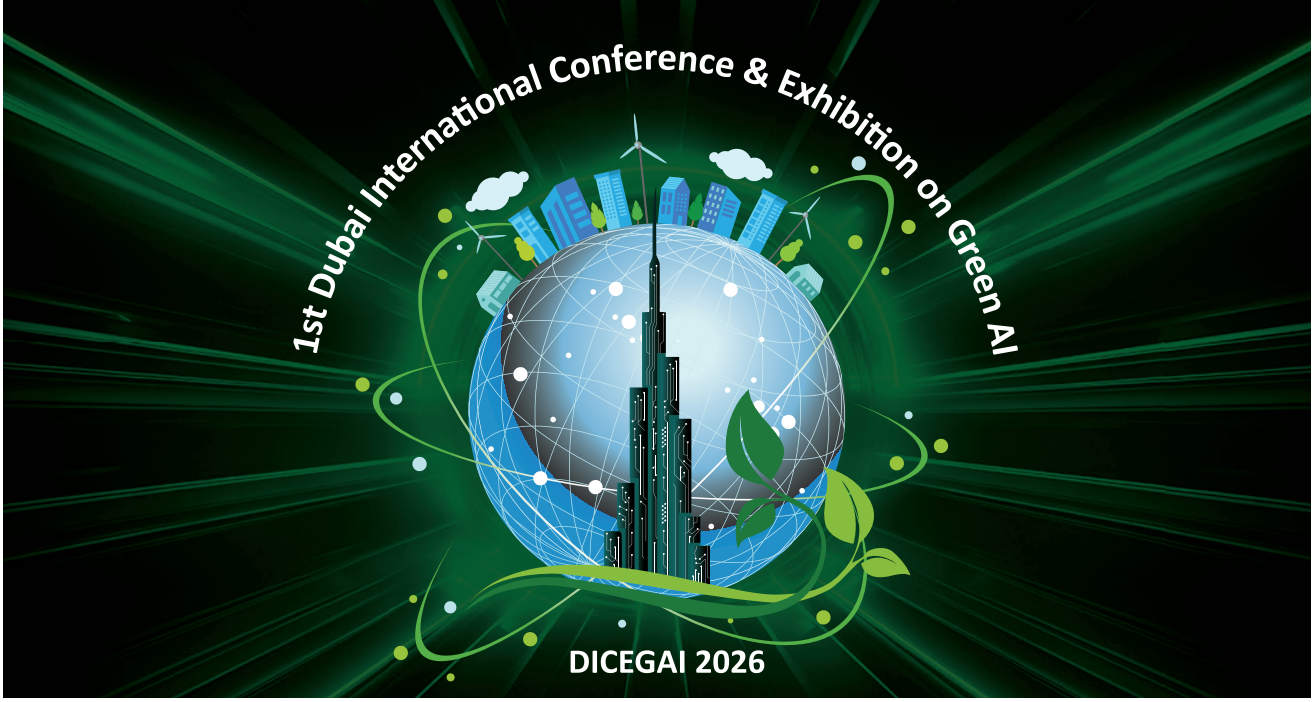

Zayed International Foundation for the Environment hosts inaugural Dubai International Conference & Exhibition on Green AI: Artificial Intelligence for a Green Planet (DICEGAI 2026)

From January 24-25, the event convenes global experts to forge AI-driven pathways for environmental resilience and a sustainable future

Under the Patronage of H.E. Lieutenant General Abdalla Khalifa Al Marri, Commander-in-Chief of the Dubai Police, the Zayed International Foundation for the Environment will host the 1st Dubai International Conference & Exhibition on Green AI for a Green Planet (DICEGAI 2026), organised in strategic partnership with the Dubai Police Academy and Curtin University Dubai.

Held under the theme 'Harnessing Technology to Achieve Environmental Sustainability' and hosted at Dubai Police Academy from January 24-25, the event explores the transformative potential of Artificial Intelligence (AI) in addressing the world's most pressing environmental challenges.

Global thought leaders, environmental scientists, AI researchers, and urban planners are converging for the two-day event to explore the transformative opportunities offered by AI in addressing global sustainability challenges such as climate risks, ecosystem decline, and environmental pressures, and position Dubai as a hub for sustainable technological innovation.

Among the eminent speakers delivering keynote addresses on the opening day of DICEGAI 2026 are Prof. Dr. Ammar Kaka, Pro Vice Chancellor, Curtin University – Dubai, and Dr. K. Anand, Managing Trustee, Adishankara Engineering Institute, India.

Prof. Dr. Mohammad A. Bin Fahad, Chairman of the Zayed International Foundation for the Environment, will deliver the welcome address, calling on speakers and guests to ignite discussions and inspire actionable strategies for a greener and AI-powered sustainable future where cutting-edge solutions are responsibly deployed for the benefit of our planet and future generations.

The opening day of the inaugural DICEGAI 2026

will commence with a keynote presentation on AI & Cybersecurity by Dubai Police. This will be followed by a keynote presentation on General AI: Importance and Challenges by Dr. Anwar Daffalla, Qatar Police Academy.

Prof. Pon Selvan, Curtin University Dubai, will deliver the final keynote presentation on Current Global Environmental Issues & Challenges.

Day 1 of the conference will feature two focus sessions, namely AI Ethics & Governance and Built Environment, where academicians and subject experts will share their insights on varied themes on the two topics.

On Sunday, January 25, speakers will discuss the path forward for responsible technological advancement in two sessions: Policies & Management, and Research & Climate Change Mitigations.

The two-day Conference will feature open discussions and interactive Q&A sessions, while the closing day will also feature recommendations by experts. Awards and certificates will be presented on the concluding day of the event.

With the hosting of the 1st Dubai International Conference & Exhibition on Green Artificial Intelligence, Zayed International Foundation for the Environment aims to unite, innovate, and rive forward a shared vision of a sustainable future powered by responsible AI.

FOCUS SESSIONS

AI Ethics & Governance (Saturday, Jan 24)

11:00 – 11:20 **Nader Torki** - Ethical AI for Decision Makers

11:20 – 11:40 **Dr. Joseph K Thomas** - Green AI and the Future of Our Planet

11:40 – 12:00 **Sarath Kumar Pachayil** - Green AI and Red AI: Two Divergent Paths of Artificial Intelligence Development.

Policies & Management (Saturday, Jan 24)

13:30 – 13:50 **Dr. Mazin Ghadir** - Green Algorithm and Sustainable AI Design

13:50 – 14:10 **Eng. Shwan Al Hashimi** - Zero_128_Zero: Resonance of Persistent Algorithms

14:10 - 14:30 **Gowri Shankar** - Digital Product Passports (DPP): Using AI to Trace, Sort, and Recycle at Scale

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Built Environment (Sunday, Jan 25)

09:00 – 09:20 **Mohammed Shamroukh** - When Buildings Learn: AI in the Built Environment

09:20 – 09:40 **Joby Joy & Nishan Ali** - Circular Smart Cities: AI for Sustainable Urban Futures

09:40 – 10:00 **Madhusudhan Rapole & Sreeram Potukuchi**: Green Cooling Technologies & AI-Driven HVAC: The Future of Sustainable Cooling

10:00 - 10:20 **Abdallah Mahmoud** - Role of Analytics and AI in Building Retrofits for Environmental Sustainability

10:20 - 10:40 **Mohamed Faizal M** - The Future of Indoor Air Quality Awareness Through AI-Enabled Monitoring

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Research & Climate Change Mitigations (Sunday, Jan 25)

11:00 – 11:20 **Ravi Varma M K, Maneesh Chandran** - Green AI for Sustainable Futures: NIT Calicut's Approach to Environmental Sustainability.

11:20 – 11:40 **Ms. Farah Alkhateeb** - Closing the Loop: Leveraging AI for a Circular Economy

11:40 – 12:00 **James Chacko** - Micro Transfiguration of Desert to Green Forest

12:00 – 12:20 **Dr. M Irfan Shaikh** - From Lessons to Missions: AI-Powered Climate and Sustainability Learning Through Games

SESSIONS & SPEAKERS AT DICEGAI 2026

\Green Cooling Technologies & AI Driven HVAC: The Future of Sustainable Cooling

Cooling accounts for a significant share of electricity demand in the UAE and wider GCC, making it central to Net Zero and energy security ambitions. This session explores how green cooling technologies—such as radiant, geothermal, and structure-integrated cooling—combined with AI-driven HVAC controls can dramatically reduce energy consumption, water use, and peak electrical loads. Drawing from real projects in hot-arid climates, the session highlights practical pathways to deploy and scale advanced cooling in both new and existing buildings.

Speakers:

Madhusudhan Rapole is a sustainable cooling expert with 10 + years of experience in delivering advanced, energy-efficient cooling solutions in hot-climate regions. He has led first-of-their-kind implementations of radiant cooling, geothermal cooling, structure cooling, and solar-assisted HVAC systems, with a strong focus on reducing energy use, water consumption, and emissions in large buildings.

A three-time TEDx speaker, Rapole holds a Bachelor's degree in Mechanical Engineering, a Master's degree in International Business, and advanced certifications in sustainability from TERI University and Stanford Graduate School of Business.

Sreeram Potukuchi is an HVAC digitalization and intelligent controls specialist with deep expertise in IoT-, AI-, and ML-enabled optimization of cooling systems. He focuses on improving operational efficiency, peak load management, and long-term performance of

large buildings and campuses in extreme climates.

Potukuchi holds a Bachelor's degree in Engineering, a Master's degree in Computer Science from Boston University, and an MBA from the University of Michigan. His background uniquely combines engineering, data science, and business.

From Lessons to Missions: AI-Powered Climate and Sustainability Learning through Games

As the urgency of climate action accelerates, traditional classroom instruction alone is insufficient for equipping professionals and leaders with the knowledge and skills needed to navigate complex sustainability challenges. Emerging research demonstrates that game-based learning and gamification transform environmental and sustainability education by fostering deep engagement, experiential decision-making, and behavioural understanding through interactive scenarios and simulations. Serious games such as climate action simulations and sustainability board games enable learners to explore real-world trade-offs and systemic impacts in ways that static lectures cannot.

Simultaneously, artificial intelligence (AI) is revolutionising how organisations collect, analyse, and interpret sustainability data, supporting real-time insight, predictive modelling, and automated reporting across complex regulatory frameworks.

The fusion of strategy-led game design and AI empowers participants to move from passive lessons to active missions, building capacity in sustainability, regulatory compliance, and innovation leadership.

Speaker:

Dr. M. Irfan Shaikh is the Program Director at SEE Institute in Dubai, a leading hub focused on sustainability, innovation, and the net-zero transition. Commencing his career in manufacturing operations, he later transitioned into academia and now leads efforts across AI, blockchain, and ESG. Working at the intersection of technology and sustainability, he is focused on exploring how AI can drive real value while supporting climate and environmental goals.

He champions responsible AI, emphasizing human judgment, ethics, and culture in its adoption, especially as data centers and digital infrastructure rapidly expand. At SEE Institute, he shapes programs that transition sustainable AI research into market-ready solutions, moving from education to incubation.

Green Algorithm and Sustainable AI Design

As Artificial Intelligence (AI) becomes a cornerstone of economic diversification in the GCC countries, the environmental cost of its massive computational requirements poses a significant challenge. Training large-scale models and maintaining hyper-scale data centers consume vast amounts of energy and water, potentially conflicting with regional sustainability mandates such as Saudi Vision 2030 and the UAE's Net Zero by 2050 strategy.

This presentation explores the dual concept of "Green in AI" and "Green by AI". It evaluates how sustainable design, specifically through lightweight architectures, model pruning, and quantization, can reduce the carbon footprint of the region's digital transformation.

Speaker:

Dr. Mazin Ghadir, Director, Healthcare Life Sciences, Alvarez and Marsal, UAE, is an External Advisor for healthcare government ministries and authorities with responsibility for

Health and Digital strategy development, implementation, execution and transformation.

As IQVIA's Director of Partnerships, he brings 19 years of global experience in healthcare innovation and transformation, having held senior roles at Dubai Health Authority, PwC, SEHA, and Cerner.

He is currently conducting post-doctorate research on Value-Based Care and Digital Health Transformation with the University of North Florida and Angel Kids Pediatrics, part of the CMS Transforming Clinical Practice initiative. Holding a PhD in Quantum Electronics and Nanotechnology from Leeds, his expertise spans Digital Health Innovation and eHealth regulatory frameworks.

Role of Analytics and AI in Building Retrofits for Environmental Sustainability

Building retrofits are a critical strategy for reducing energy consumption, lowering carbon emissions, and achieving global sustainability goals. However, traditional retrofit approaches often lack precision and adaptability, creating a need for advanced solutions.

Analytics and Artificial Intelligence (AI) play a transformative role in this domain by enabling data-driven decision-making and predictive capabilities. AI-powered analytics minimize environmental impact by identifying inefficiencies, recommending targeted upgrades, and monitoring performance pre- and post-retrofit.

The cause-and-effect relationship of retrofitting demonstrates significant benefits: reduced carbon footprint, lifecycle cost savings, improved occupant comfort, and enhanced operational efficiency through smart technologies. To ensure success, industry standards such as ASHRAE 211 (Energy Audits), ASHRAE 230 (Commissioning), and ASHRAE 228 (Zero Net Energy Evaluation) provide essential frameworks for planning and execution.

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Speaker:

Abdallah Mahmoud, Master of Science in Building Services, Member ASHRAE, is currently the ASHRAE Falcon Chapter President, Governmental Affairs committee regional chair for the ASHRAE Region At Large and professionally, MEA Regional Director of SKA/ Verticals at Daikin Middle East & Africa. Abdallah has extensive experience in Energy Efficiency, District Energy, Automation, Performance Contracting, Sustainability, Digital Transformation & Smart Cities. Additionally. He is also a member of the advisory committee for Curtin University and was a member of the board of Senate at The British University in Dubai.

Digital Product Passports: Using AI to Trace, Sort, and Recycle at Scale

As global waste volumes grow and supply chains become more complex, Digital Product Passports (DPPs) offer a scalable, data-driven pathway toward a circular economy. This case study investigates how Green AI can be applied to trace, sort, and recycle materials at scale by integrating artificial intelligence, logistics data, and satellite intelligence.

AI-powered DPPs are used to enable real-time tracking of products and materials across their lifecycle, capturing composition, origin, usage, and end-of-life pathways to support responsible recovery and recycling decisions.

At the operational level, AI-driven computer vision and sensor fusion systems automatically identify, classify, and sort waste streams with high accuracy, improving material purity and recycling yields.

Machine learning models further optimize recycling workflows by predicting contamination, degradation, and recovery potential. The RecycleNXT app, developed jointly with engineers from the University of Bristol, demonstrates how AI can address upstream environmental impacts by tracking pollution during logistics operations while SpaceNXT Labs leverages satellite imagery and geospatial AI to analyse pollution patterns and large-scale waste disposal. This case study demonstrates how Green AI can provide end-to-end visibility from production to disposal, supporting sustainable resource management, regulatory compliance, and circular economy outcomes.

Speaker

Gowri Shankar Sivabala is an academician, engineer, AI consultant, and sustainability-focused entrepreneur driving global impact across education, engineering, and innovation. He is the Founder of SpaceNXT Labs, which leverages satellite imagery and geospatial AI for environmental intelligence and sustainability applications.

He is also the Co-Founder of RecycleNXT, a circular-economy venture that transforms plastic waste into durable consumer products. He has also founded DAIC – a leading AI community in Dubai. With experience across 30+ professional roles, Gowri has collaborated in engineering research with industry leaders such as Rolls-Royce and Airbus.

An alumnus of the University of Bristol, he is a member of the UN Innovations Network and the AI in Education group at the University of Oxford and is currently pursuing his doctoral research in AI in Education.

The Future of Indoor Air Quality Awareness through AI-Enabled Monitoring

This presentation introduces participants to the importance of indoor air quality (IAQ) and the growing role of artificial intelligence in promoting environmental awareness. As indoor spaces increasingly influence our health, comfort, and productivity, understanding the factors that affect air quality has become essential.

Through the use of advanced air quality sensors, cloud-based data storage, and real-time monitoring via mobile applications and website dashboards, AI makes it possible to visualize and track IAQ conditions from anywhere in the world. The session highlights the importance of indoor air quality and how AI-enhanced tools simplify data interpretation, detect unhealthy trends, and support timely decision-making.

By the end of the presentation, participants will understand the basic principles of indoor air quality and recognize how AI technologies can empower individuals, organizations, and communities to become more aware, proactive, and engaged in maintaining healthier indoor environments.

Speaker

Mohamed Faizal, Indoor Air Quality Consultant, is an active ASHRAE Member and current YEA Chair at ASHRAE Falcon Chapter. With his expertise in IAQ, he focuses on delivering engineering solutions to clients, consultants and contractors.

Faizal began his career as an estimation and tendering engineer at a renowned contracting firm in India, gaining experience on HVAC systems and products and acquiring intensive knowledge and expertise on air filtration on both particulate and gaseous contaminants. A specialist in providing solutions to various concerns on indoor air quality in Residential, Commercial and Industrial Application, Faizal holds an advanced engineering diploma in HVAC & R, a post-graduate diploma in Marketing Management and a Bachelor's in Mechanical Engineering.

Zero_128_Zero: Resonance of Persistent Algorithms

As an architect practicing in the UAE, my interest in AI is not academic or speculative. It comes from a professional responsibility to understand how emerging technologies will shape the cities, infrastructure, and decision-making frameworks we are collectively building today. I see AI not as a standalone technology, but as a tool that is increasingly influencing how urban systems are conceived, optimized, and governed.

I will present a structured perspective on how early investment in AI infrastructure, despite its initial embodied energy cost, is a necessary and historically consistent step toward achieving long-term efficiencies, smarter urban systems, and more sustainable outcomes at scale.

From my standpoint, the critical discussion is how intelligently AI is embedded early enough to eliminate inefficiencies across planning, design, construction, and operation in the years ahead.

As models become smaller, inference more efficient, and edge computing more prevalent, the trajectory clearly points toward reduced energy intensity and wider accessibility.

Speaker:

Shwan Alhashimi is an architect whose practice spans the full spectrum of design intelligence, from strategic master planning to the granular systems that govern how buildings perform, communicate, and endure. As Managing Director of Archiplexus Architects LLC in Dubai, he leads a firm recognised for its work on projects of national significance across the UAE, where he has been a resident for 45+ years.

He champions innovative, sustainable, and biophilic design, seamlessly integrating nature

into urban environments. His expertise spans architecture, interiors, landscape, and product design, creating human-centric spaces that foster deep connections to the natural world.

Circular Smart Cities: AI for Sustainable Urban Futures

Circular Smart Cities leverage AI and digital twins to convert sustainability goals into measurable, city-wide outcomes. By creating real-time digital representations of urban systems, city leaders gain visibility into how resources flow, where waste is generated, and which interventions deliver the highest return—both economically and environmentally.

A concrete use case is an AI-powered recycling kiosk placed in public spaces. Citizens dispose of plastic items while cameras and computer vision automatically identify the product type and material, validate recyclability, and measure weight. In return, users receive instant incentives, encouraging responsible behavior without friction. Every interaction updates a city-level digital twin, allowing municipalities to track recycling performance, reduce landfill dependency, optimize collection routes, and design smarter incentive policies.

The result is a data-driven circular ecosystem—one that aligns citizen participation, operational efficiency, and sustainability targets, enabling cities to reduce waste, improve recyclability, and make informed decisions backed by real-time intelligence.

Speakers:

Joby Joy, Director, Neurologic AI, Founder & CEO Autobeanz, is a seasoned IT industry leader with 25+ years of experience driving digital transformation and business innovation across the Middle East. Previously, as Chief Digital Officer at AGMC and Director of Customer Platforms at the Dubai Integrated Economic Zones Authority (DIEZ), he led large-scale digital programs to enhance customer experience, operational efficiency, and enterprise agility.

A recognized innovator and value creator, Joby Joy pioneered digital transformation for automotive dealerships via Autobeanz's next-generation, composable technology, while with Neurologic AI, he aims to advance AI-driven business systems and intelligent automation.

Nishan Ali, CEO & Founder of Neurologic AI, is a seasoned data scientist with over 10 years of experience. An IIT Jodhpur alumnus, he has built future-forward AI, including foundational models and enterprise-grade AI agents, for Fortune 5 companies like UnitedHealth Group and dynamic Silicon Valley startups.

As Neurologic AI's leader, he pioneers transformative AI solutions across healthcare, retail, manufacturing, and robotics. Nishan holds two US patents, has been published in a top health journal, and has developed impactful AI/ML products. His expertise in machine learning and scalable AI architecture has earned his company industry recognition, including the *Times Business Award 2024* and *Times Health Award 2025*.

Green AI for Sustainable Futures: NIT Calicut's Approach to Environmental Sustainability

AI presents a dual challenge and opportunity for environmental sustainability, consuming significant resources while offering powerful tools for ecological solutions. This presentation from the National Institute of Technology Calicut (NIT Calicut) explores the paradigm of Green AI – applying AI for environmental monitoring, resource optimization, and sustainable development.

Research pathways focusing on reducing computational costs (energy-efficient models, hardware optimization) and leveraging AI for large-scale environmental management, including smart grids, water resource

optimization, and climate change impact assessment, aligning with global sustainability goals will be touched upon.

We will explore how computationally prudent AI can foster a circular economy and build resilient ecosystems, moving beyond theoretical benefits to practical, scalable applications for a greener planet. This presentation also introduces the SAMUDRA (Sustainable Applications for Mobility, Urban Development, and Resilience using AI) project, a flagship initiative by the Centre of Excellence in AI (CoE-AI) at NIT Calicut.

Speakers:

Prof. Dr. Ravi Varma Mundakkara Kovilakam; **Dr. Maneesh Chandran, Assistant Professor; S.D Madhu Kumar, Professor** & Chairperson of Centre for Information Technology Research & Automation (CITRA); and **Prof. Prasad Krishna** National Institute of Technology Calicut

When Buildings Learn: AI in the Built Environment

The rise of AI and machine learning is ushering in a new era of "cognitive" buildings that can analyze data and continuously improve their performance. From HVAC systems that fine-tune themselves to lighting that adapts to occupant behavior, intelligent algorithms are transforming how buildings operate.

With the help of AI, building systems are becoming more efficient and effective, enhancing both comfort and sustainability. In real-world pilots, AI-driven HVAC controls have even cut energy use by roughly 15% while maintaining comfort conditions.

This presentation demystifies AI and IoT applications in building services in accessible terms (no coding required). Attendees will explore how AI-based analytics can predict equipment failures before they happen, optimize energy use in real time, and even act as a 'virtual assistant' for facility managers, learning from patterns and adjusting systems automatically to meet changing conditions.

Key concepts like supervised learning, digital twins, and explainable AI will be explained in accessible terms and explored through the lens of real-world examples and scenarios– from smart offices that learn occupancy patterns to AI-driven cooling in extreme Middle East climates – illustrating energy savings, enhanced occupant comfort, and operational improvements achieved through automation.

Speaker:

Mohammed Shamroukh is the Co-Founder and CEO of MCube Engineering Consultants, a specialist consultancy driving digitalization, decarbonization, and indoor environmental quality across the built environment. A recognized thought leader and active volunteer, he serves across multiple industry associations in both technical and leadership roles — including Regional and Chapter leadership positions within ASHRAE Falcon Chapter, and as former Chair of the CIBSE Young Engineers Network (YEN) UAE.

His ongoing work explores the intersection of AI, digital twins, and climate-adaptive building design, translating technical insights into practical, data-driven sustainability strategies.

Ethical AI for Decision Makers

This presentation is designed to equip decision makers with a clear, practical understanding of Ethical AI, why it matters for your organization, and the principles needed to adopt AI responsibly.

Key takeaways include:

- What is Ethical AI
- Why Ethical AI Matters for Organizations
- Core Principles of Ethical AI

- Ethical Risks in AI – Key risks leaders should watch for during AI adoption.
- Leadership Actions for Ethical AI
- Practical Steps for Implementing Ethical AI
- Global Frameworks and Standards
- Practical next steps to begin your Ethical AI journey effectively.

Speaker:

Nader Torki, Founder and CEO at Sia AI Consultancy, is an Artificial Intelligence and Innovation Strategy Consultant.

With over 25+ years of experience, Torki translates business goals into practical AI use cases and initiatives by building tailored strategies across various domains. Nader has delivered digital transformation projects and consultancies for public and private sectors in the Middle East, Europe, North America, South Asia, and Australia.

Closing the Loop: Leveraging AI for a Circular Economy

The biggest challenge in achieving a circular economy is not infrastructure alone; it is data. Specifically, the lack of verified, real-time data at the consumer and household level has made Scope 3 emissions and EPR compliance difficult to measure, manage, and act on.

eGreenBadge addresses this gap by leveraging AI as the intelligence layer that connects consumers, recycling infrastructure, recyclers, and regulators into one end-to-end circular data system. At the core of the platform is an AI-powered mobile application that enables consumers to easily identify recyclable materials, log packaging waste, and validate recycling actions through simple, intuitive interactions.

AI removes friction for the consumer by automating classification, reducing effort, and making participation both accessible and engaging. This is critical, as consumer behavior has historically been the missing data point in circular systems. Once logged, these actions are connected to verified collection and treatment data from recycling partners, transforming everyday recycling behavior into auditable ESG, Scope 3, and EPR data.

By using AI to simplify participation, improve data accuracy, and unify fragmented stakeholders, eGreenBadge demonstrates how intelligent digital systems can close the loop, turning waste into resources and data into a foundation for scalable, transparent circular economies.

Speaker:

Farah Alkhateeb is the Founder and CEO of eGreenBadge, a UAE-based green tech startup using AI to drive a circular economy and smarter waste management. She leads the development of an AI-powered app that scans and classifies waste, helping residents and businesses recycle correctly while turning waste into a resource.

Through eGreenBadge, she is building a data-driven sustainability ecosystem where every recycling action generates insights that support better policy and infrastructure decisions in the UAE. Farah is a long-standing circular economy advocate and social entrepreneur, focused on making sustainability engaging, rewarding, and accessible to communities and organizations.

CONGRATULATIONS TO

H.H. SHEIKH MOHAMMED BIN RASHID AL MAKTOUM

VICE PRESIDENT, PRIME MINISTER OF U.A.E. & RULER OF DUBAI ON THE 20TH ANNIVERSARY OF HIS ACCESSION DAY IN THE EMIRATE OF DUBAI.

WE WISH HIS HIGHNESS PROGRESS AND SUCCESS.

مؤسسة زايد الدولية للبيئة

Zayed International Foundation for the Environment

'Green AI marks an important step forward in environmental stewardship, blending traditional respect for nature with modern innovation'

Dr. Hamdan Khalifa Al Shaer, Vice Chairman, Zayed International Foundation for the Environment, highlights how the strategic pivot towards Green AI upholds the pioneering vision of the late Sheikh Zayed for harmonious progress and environmental preservation. Detailing Green AI's crucial role in navigating the MENA region's unique environmental challenges, he discusses how this innovative approach, fostered through impactful partnerships and learning from the UAE's leadership, is set to redefine humanity's relationship with the natural world and drive sustainable development.

The Zayed International Foundation for the Environment honours the vision and guiding principles of the founding father of the UAE, the late Sheikh Zayed. How have these foundational principles driven the Foundation's significant past achievements in environmental stewardship?

The Zayed International Foundation for the Environment was established to continue the vision of the late Sheikh Zayed bin Sultan Al Nahyan, whose philosophy centred on achieving harmony between human progress and environmental preservation. His belief in sustainability, respect for nature, and the deep connection between people and the environment has guided every milestone of the Foundation.

Building on these principles, the Foundation promoted conservation programs, restored natural habitats, and launched educational initiatives that fostered widespread awareness of environmental responsibility. Furthermore, it developed policies that linked sustainability with cultural heritage and created international recognition through the Zayed International Prize for the Environment.

Together, these achievements reflect how

Sheikh Zayed's enduring vision remains the Foundation's moral guide and strategic foundation, enabling the Foundation to champion global environmental causes and support scientific research.

Could you elaborate on how the strategic direction towards creating greater awareness for Green AI first came about? Why, according to the Zayed International Foundation, is the widespread adoption of Green AI so crucial for sustainable development?

The Foundation's strategic focus on Green AI emerged as Artificial Intelligence (AI) advanced rapidly, just as global climate challenges intensified. As early assessments highlighted the environmental cost of digital technologies, and as the UAE prioritized sustainability in its innovation agenda, it became clear that a responsible approach to AI was needed.

Consequently, Green AI was identified as a pathway that could reduce the ecological footprint of digital systems while also unlocking new opportunities for environmental protection. Its widespread adoption is essential because it empowers governments, businesses, and communities to make data-driven decisions that directly support sustainability.

Green AI can reduce emissions, improve water and energy efficiency, safeguard biodiversity, and strengthen climate resilience. In this way, it ensures that technological advancement contributes positively to long-term environmental goals rather than intensifying existing pressures.

The Zayed International Foundation's success is also rooted in the strength of its public-private partnerships. What role do you see for partnerships in accelerating the deployment of impactful Green AI solutions in a culturally sensitive manner?

Public-private partnerships play a central role in advancing Green AI because they bring together the strategic vision of governments with the innovation and agility of the private sector. When these partnerships incorporate local institutions and community perspectives, they also help ensure that Green AI solutions are culturally appropriate, ethically guided, and widely accepted.

Moreover, partnerships support faster deployment by coordinating funding, sharing

expertise, and developing pilot projects that demonstrate practical value and scalability. Through this collaborative approach, Green AI solutions can be adapted to local priorities, build trust among stakeholders, and deliver meaningful environmental impact across the region.

Considering the unique environmental context of the Middle East, what specific Green AI applications hold the most promise for addressing regional challenges like water scarcity, desertification, or sustainable urban development?

Given the region's unique environmental pressures, several Green AI applications are particularly promising. For water scarcity, AI-powered tools can forecast water demand, enhance irrigation efficiency, improve desalination processes, and detect leaks in real time, which together lead to significant water savings.

In the fight against desertification, AI, combined with satellite monitoring, can track soil health, identify vegetation loss, and guide targeted land restoration. For sustainable urban development, AI can strengthen smart city systems by optimizing energy consumption, improving transportation flows, and predicting urban heat patterns.

Additionally, AI-based climate forecasting can support governments as they prepare for more frequent extreme weather events. When integrated effectively, these applications provide the region with more precise and forward-looking solutions to long-standing environmental challenges.

What are the biggest barriers to adopting AI solutions for environmental protection in the MENA region, and how can these be strategically overcome through collaboration and innovation?

Despite the potential of AI, several barriers still affect its adoption in the MENA region, including limited access to reliable environmental data, uneven levels of technical infrastructure, high initial investment costs, and a shortage of specialized expertise. Concerns about ethics and governance also contribute to hesitancy in some areas.

However, these obstacles can be addressed through coordinated regional collaboration that encourages data sharing, promotes best practices, and reinforces capacity building.

Investments in education and training are particularly important because they help develop the local talent base needed for long-term success. At the same time, stronger regulatory frameworks and ethical guidelines can build trust among decision makers and communities. Through these combined efforts, the region can transform existing barriers into opportunities for innovation and progress.

The UAE has created an enabling environment for Green AI adoption and innovation. What critical insights or models can other countries in the MENA region draw from the UAE's experience to accelerate their own Green AI initiatives?

The UAE's experience demonstrates how long-term vision, strong policies, and coordinated action can create fertile ground for Green AI. Other countries in the region can learn from this approach, which links national AI strategies with broader sustainability goals to ensure alignment across government, industry, and academia.

The country's investments in talent development, particularly through research partnerships and youth-focused education, provide another valuable model for empowering future innovators.

Additionally, the UAE's emphasis on pilot projects in areas such as smart cities, clean energy, and climate modelling shows how experimentation can produce scalable solutions tailored to regional needs. By adapting these insights to their own contexts, MENA countries can accelerate progress toward a more sustainable and technology-enabled future.

What is your overarching vision for Green AI's role in driving change?

Green AI marks an important step forward in environmental stewardship because it blends the region's traditional respect for nature with the possibilities offered by modern innovation. As the Foundation continues to grow its efforts, it will remain committed to supporting youth, strengthening international collaboration, and ensuring that technology contributes to sustainability rather than adding to environmental strain.

By combining Sheikh Zayed's guiding values with the capabilities of new digital tools, the Foundation seeks to build a future where environmental responsibility and human advancement work together as complementary pillars of development.

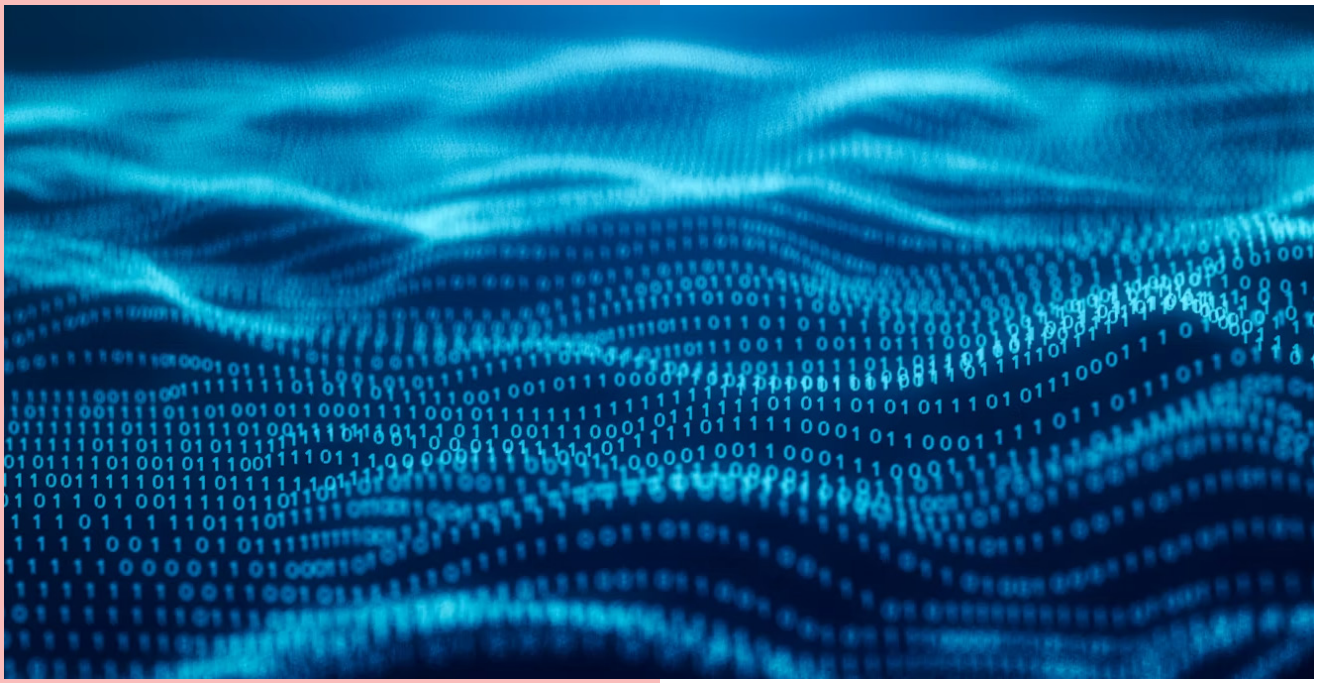
'Education plays a pivotal role in preparing the next generation of professionals to harness AI for environmental sustainability'

Prof. Chithirai Pon Selvan, Director of Research and Head of School, Science and Engineering, Curtin University Dubai, discusses the pivotal role of strategic collaborations in bridging cutting-edge research with critical environmental action to advance Green AI. He highlights how the Zayed International Foundation for the Environment's leadership in environmental advocacy and regional outreach synergizes with Curtin University Dubai's academic excellence, accelerating practical, scalable solutions for global environmental sustainability.

How did the collaboration between Curtin University and the Zayed International Foundation for the Environment come about? What are the synergies you share, and what are the outcomes you expect to achieve from this conference?

The collaboration between Curtin University Dubai and the Zayed International Foundation for the Environment was initiated through a shared commitment to sustainability, innovation, and impactful knowledge exchange, and was formalised through a Memorandum of Understanding. This strategic partnership brings together Curtin University's strengths in research-led education, emerging technologies, and industry engagement with the Zayed International Foundation's leadership in environmental advocacy, policy influence, and regional outreach.

A key outcome of this collaboration is the joint organisation of the Green AI Conference, themed "Harnessing Technology to Achieve Environmental Sustainability," The synergies between the two institutions are reflected in a common focus on leveraging advanced technologies and AI, to address pressing environmental challenges.



Through this conference, we aim to create a multidisciplinary platform that connects academia, industry, policymakers, and students to share knowledge, showcase innovative solutions, and explore practical applications of Green AI.

How can institutions like the Zayed International Foundation and Curtin University Dubai, for example, foster interdisciplinary collaboration and accelerate the development of Green AI solutions? Do you see this as a way forward for other organisations to follow?

Institutions such as the Zayed International Foundation and Curtin University Dubai can foster interdisciplinary collaboration by creating structured platforms where expertise from engineering, artificial intelligence, environmental sciences, policy, and industry converge to address sustainability challenges.

Through joint research initiatives, co-hosted conferences, industry-linked projects, and student engagement, these collaborations enable the co-creation of practical and scalable Green AI solutions. Curtin University contributes research-led innovation and talent development, while the Zayed International Foundation provides strategic direction, environmental insight, and stakeholder connectivity, ensuring that technological solutions remain socially and environmentally relevant.

This integrated approach accelerates the translation of AI research into real-world environmental applications. Importantly, such partnerships demonstrate a replicable and forward-looking model for other organisations, highlighting the value of cross-sector collaboration in driving sustainable innovation.

By aligning academic capability with policy influence and industry needs, this model offers a clear pathway for institutions seeking to leverage Green AI as a catalyst for long-term environmental impact and sustainable development.

What are some of the most promising research frontiers in Green AI that Curtin University Dubai is engaged in?

Curtin University Dubai is actively engaged in several cutting-edge research frontiers in Green AI, leveraging AI to drive sustainable and socially impactful solutions.

In the area of IoT and Smart Systems optimisation, Curtin University Dubai focuses on improving the efficiency of connected urban infrastructure. In parallel, blockchain-enabled energy security research supports transparent, resilient, and sustainable energy management for smart cities.

Through AI and Autonomous Robotics, future research aims to develop autonomous systems for smart cities, incorporating navigation, computer vision, and predictive maintenance to reduce energy consumption and enhance urban resilience.

In Soil and Agriculture Innovation, Curtin researchers are advancing precision agriculture using AI-powered drones, smart soil sensors, and targeted pesticide delivery systems to promote sustainable food production while minimizing environmental impact.

Additionally, the Future Workforce Planning and Future Learning Systems clusters explore AI-driven predictive analytics and immersive educational tools that indirectly support sustainability by optimizing human capital and resource use.

Across these initiatives, Curtin Dubai combines AI, IoT, robotics, and data-driven insights to create practical, scalable solutions that align technology with environmental sustainability, exemplifying how interdisciplinary research can accelerate the development and deployment of Green AI solutions.

What role does education play in preparing the next generation of professionals to effectively develop, implement, and critically evaluate AI for environmental good?

Education plays a pivotal role in preparing the next generation of professionals to harness AI for environmental sustainability.

At Curtin University Dubai, students gain the knowledge, practical skills, and critical thinking needed to develop, implement, and evaluate Green AI solutions. Through research projects, industry collaborations, and real-world applications, students learn to apply AI technologies responsibly and effectively to address environmental challenges.

Exposure to emerging technologies, data analytics, and AI-driven environmental modeling equips them to design solutions that are both innovative and sustainable. Education also fosters ethical awareness, encouraging future professionals to consider long-term environmental impacts, societal benefits, and responsible innovation.

By combining technical expertise with a strong understanding of sustainability, education ensures that the next generation of professionals can drive AI solutions that contribute meaningfully to environmental stewardship and global sustainability goals.

From a university's research leadership perspective, what are the biggest challenges and opportunities in securing funding, attracting

talent, and translating Green AI research from academic labs into real-world impact and scalable solutions?

From a research leadership perspective, developing Green AI offers tremendous opportunities in securing funding, attracting talent, and achieving real-world impact.

Curtin University Dubai is well-positioned to lead in this space, leveraging its strong pool of talented researchers and experts to drive innovative AI solutions for environmental sustainability. The University's expertise and industry connections enable the rapid translation of research from labs into scalable, practical applications, addressing pressing environmental challenges.

Strategic partnerships with industry, government, and international organisations further enhance the potential for impactful collaborations and knowledge exchange. By combining cutting-edge AI technologies with sustainability-focused initiatives, Curtin University Dubai demonstrates how academic excellence can directly contribute to measurable environmental benefits and support the wider adoption of Green AI solutions in communities and industries alike.

In what ways can AI help us better understand complex ecological systems and predict environmental tipping points with greater accuracy than traditional methods, and what research infrastructure is needed to support this?

AI enables a deeper understanding of complex ecological systems and allows for accurate prediction of environmental tipping points.

By applying machine learning, deep learning, and advanced data analytics to large datasets such as satellite imagery, sensor networks, climate records, and biodiversity data, AI can reveal patterns, trends, and early indicators of ecosystem changes.

This provides valuable insights into potential shifts in habitats, species populations, or environmental thresholds, supporting proactive and informed decision-making.

Effective research in this field relies on high-performance computing, cloud-based data platforms, integrated IoT and sensor networks, and advanced AI analytics tools. Collaboration with government, industry, and conservation organisations ensures access to rich datasets and practical perspectives, allowing AI to play a key role in advancing sustainable environmental management and ecosystem resilience.

Could you outline how Curtin University Dubai's strategic approach to leveraging technology translates into practical solutions and societal impact?

Curtin University Dubai is proud to be at the forefront of leveraging technology, particularly Green AI, to address environmental challenges and promote sustainable development.

Through strategic collaborations, including our partnership with the Zayed International Foundation, we are committed to translating research into practical solutions that benefit communities, industries, and ecosystems.

Our focus on AI, smart systems, and sustainable innovation reflects our broader mission to integrate academic excellence with societal impact.

This commitment is further strengthened by the launch of the Master of Science in Artificial Intelligence and Master of Science in Cybersecurity from 2026, which equip graduates with advanced technical expertise and a strong ethical foundation to address emerging technological and sustainability challenges.

By fostering knowledge exchange, supporting emerging technologies, and engaging students and professionals in real-world sustainability initiatives, Curtin Dubai aims to inspire responsible innovation and cultivate the next generation of environmental leaders.

The Green AI Conference exemplifies this commitment, serving as a platform to showcase research, share insights, and strengthen partnerships that drive measurable environmental and societal benefits.

'The Zayed International Foundation for the Environment is in a strong position to lead the global shift toward responsible Green AI'

Dr. Anour F A Dafa-Alla, author of *Artificial Intelligence for a Green Planet* and an acclaimed AI and Data Privacy Researcher, discusses the importance of Green AI in delivering scalable solutions to address global environmental challenges and calls for prioritizing the effective and responsible use of AI. Dr. Anour further highlights the pivotal role of organizations like the Zayed International Foundation for the Environment in advancing this field, while emphasizing the unique opportunity for the Arab region to define and lead sustainable AI systems to deliver impact at scale.

How do you define 'Green AI' in practical terms, and what are the most critical technical advancements needed to truly harness AI for environmental impact at scale?

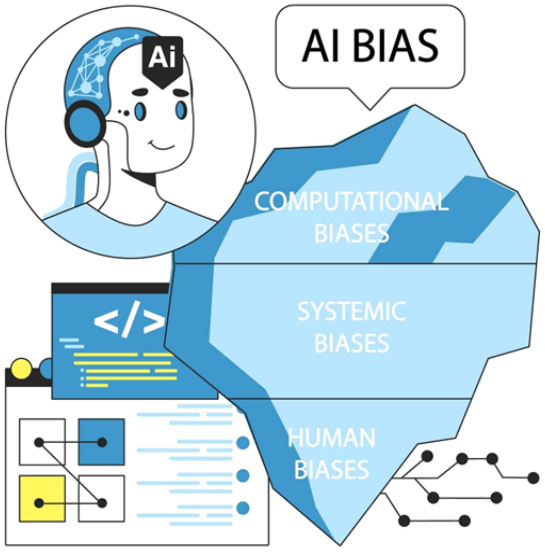
In my work and my book, *Artificial Intelligence for a Green Planet*, I define 'Green AI' as a practical framework with three layers. It is not just a slogan.

Greening the AI itself: This looks at the environmental cost of the technology. We must design algorithms and hardware that use less water and energy and create less carbon. We must also measure the energy use and emissions of every project carefully.

AI for Greening: This is how we use the technology. We use AI to protect nature, monitor the environment (air, water, and biodiversity), and warn leaders about problems early.

AI for Green Governance: This means using AI to improve rules and responsibility. It ensures that technology supports long-term sustainability, not just short-term profit.

This is different from 'Red AI', which focuses only on accuracy, no matter the cost. To make a big impact, we need these technical changes:



AI BIAS

Energy- and Data-Efficient Learning: We must stop using "brute-force" computing (using raw power). We need methods that reduce the workload. For example, Federated Learning minimizes data transfer. We also need to make model structures more efficient (using techniques like pruning). This stops AI from increasing emissions.

Lifecycle Tools: We need standard tools to report the energy and carbon footprint of training AI. Projects must be transparent. They should report their resource use, not just how accurate they are.

Sustainable Infrastructure: We cannot ignore the physical side of AI. Data centers use a lot of water and energy. To scale Green AI, these centers must run on renewable energy and connect intelligently to the power grid.

Could you share some of the most compelling real-world applications of Green AI you've seen or been involved with that offer scalable solutions to pressing environmental challenges?

Yes, there are many examples where AI supports climate and nature goals:

Monitoring forests and carbon from space: AI looks at satellite images to tell the difference between natural forests and tree plantations. This helps track deforestation. New work combines AI, satellites, and ground data to measure how much carbon forests hold.

Real-time deforestation detection: Deep learning models (like YOLOv8) can find deforestation almost as soon as it happens. This allows authorities to act before the damage is permanent.

Biodiversity monitoring: We use cameras, sound sensors, and drones with AI to identify animals and catch poachers. Projects like CAPTAIN use data to decide which areas to protect to save the most species.

Optimizing cities and energy: AI helps buildings use less energy and improves traffic flow. In some tests, this has reduced emissions by more than 10%.

In my work, I do not just ask, "Can we do this technically?" I ask, "Is it efficient, fair, and responsible throughout its life?"

As a researcher in AI and data privacy, what ethical considerations arise when deploying

AI for environmental purposes, particularly concerning data privacy, resource allocation, and potential unintended consequences?

There are at least three main groups of ethical concerns:

Data Privacy and Surveillance: Environmental AI uses many tools like sensor networks, satellites, drones, and citizen science apps. These tools can accidentally record sensitive private details, such as the location of farms or fishing communities, or even audio that identifies people. We must use "privacy-by-design." This means we should collect as little data as possible and have clear rules about who can see it.

Fairness in Sharing Resources: AI models often help leaders decide where to spend money on climate protection or which areas to save. If the data used to train the AI is biased—for example, if it ignores poor or rural communities, the decisions will be unfair. This could take resources away from the people who need them most.

Unexpected Negative Effects: Using more AI can increase total emissions and electronic waste if we are not careful. Also, if AI makes shipping cheaper, people might buy more goods, which leads to more pollution (this is called a "rebound effect"). Green AI must have safety rules ("guardrails") to protect justice and the planet.

How can organizations, such as the Zayed International Foundation for the Environment, best facilitate the rapid and responsible advancement of Green AI?

The Zayed International Foundation is in a strong position to lead the global shift toward responsible Green AI. From my work with the Foundation, I know they are serious about this. They listen to experts and use scientific advice to make decisions. This openness is essential for any organization that wants to shape a new field correctly.

I am very proud that the Foundation accepted my suggestion to organize the world's first international conference on Green AI. This is a major step. Bringing people together for this inaugural conference will help set the global plan for research and policy for the coming years. I am also grateful that the conference theme shares the title of my book. This shows our shared commitment to combining AI and environmental sustainability.

To help Green AI grow even faster, the Foundation can focus on four key areas:

Setting Standards: Create clear guidelines for Green AI. These should cover energy efficiency and data rules. We also need benchmarks to measure a project's carbon footprint and water use, not just its technical accuracy.

Funding and Connecting People: Fund teams that combine AI experts with ecologists and social scientists. The Foundation should continue to host events that bring together global researchers, policymakers, and leaders.

Open Infrastructure and Data: Support the creation of open environmental data sets that are safe and legal to use. Encourage the use of "green" data centers that run on renewable energy.

Building Expertise: Invest in training "bilingual" experts—people who speak the language of AI and the language of environmental science. Create awards and programs to support young innovators in the Arab region and the Global South.

The Zayed International Foundation's decision to launch the first global Green AI conference marks the beginning of a new chapter for environmental innovation. This step is not merely an event; it is a strategic declaration of intent—a recognition that the future of environmental stewardship will be shaped by how effectively we harness AI within the limits of our planet.

As mentioned earlier, I am honored that the conference theme reflects the title of my book, and I view this alignment as both a professional milestone and a shared commitment to building a future where technology and the environment reinforce, rather than undermine, one another.

Looking five to 10 years ahead, what transformative role do you envision AI playing in addressing global climate change and biodiversity loss?

Over the next decade, if steered responsibly, AI

could become a core layer of planetary intelligence:

Continuous, high-resolution Earth observation: AI will fuse satellite, drone, in-situ sensor, and citizen science data to offer something close to a "live dashboard" of the Earth system: forests, oceans, cryosphere, urban heat islands, etc.

Targeted and adaptive conservation: Reinforcement learning and predictive models can identify where interventions—such as protected areas or restoration—deliver the highest biodiversity and climate returns, adapting as conditions and species distributions change.

Decarbonizing energy and infrastructure: AI can anticipate demand, integrate variable renewables, and optimize storage, transmission, and consumption, making high-renewable grids more stable and cost-effective.

Risk foresight and early warning: From wildfires and floods to coral bleaching and crop failures, AI-based early warning systems can buy precious time for adaptation and disaster risk reduction.

However, this transformative role is contingent on aligning AI expansion with planetary boundaries. Without strong guardrails, AI could just as easily accelerate climate and biodiversity breakdown by driving more resource extraction, consumption, and emissions.

What are the biggest hurdles that you foresee, from a technical, economic, or societal standpoint, that would impact the widespread adoption of Green AI solutions, and how can we strategically overcome them?

I foresee four main challenges. These include:

Energy Limits: AI data centers are growing faster than our ability to provide green electricity. We would therefore need regulations that emphasise energy efficiency. Our strategy should also link the growth of AI to the growth of renewable energy capacity.

Incomplete and Biased Data: Many developing countries do not have high-quality environmental data. This leads to bad decisions. The way to overcome this hurdle is to invest in open data systems and support local communities in collecting their own data.

Lack of Mixed Skills: We have AI experts and environmental experts, but very few people understand both fields. A key strategy to address this challenge is to create university programs that teach AI, ecology, and ethics together. We should also support knowledge exchange between countries in the Global South.

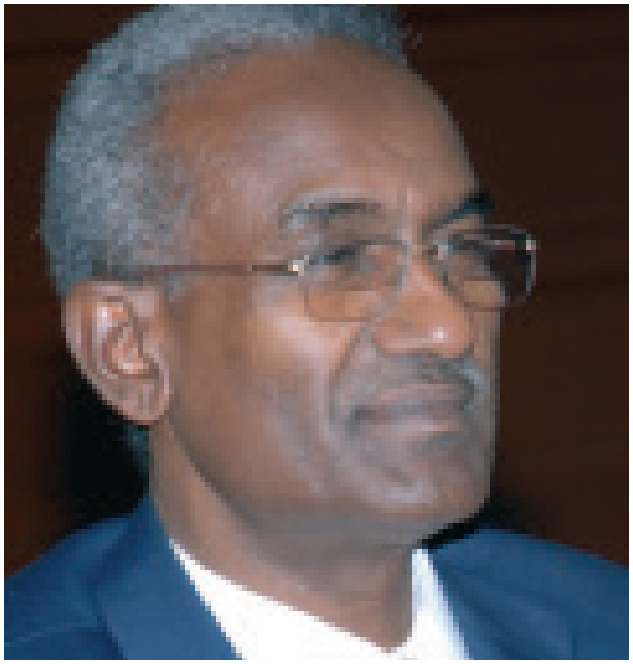
Lack of Trust: If AI systems are secretive ("opaque"), people will not trust them. This is why we must accelerate efforts to make environmental AI transparent and easy to explain. The public needs to know how decisions are made.

Overcoming these hurdles requires strategic alignment between technical research, regulation, and public investment. Green AI must become a mainstream design norm, not a niche subfield.

Beyond technical efficiency, what crucial ethical considerations should shape Green AI development in the region?

I would like to emphasize two brief points. One, Green AI is about power and fairness; it is not just about technology and electricity. We must always ask: Who benefits from these insights, and who pays the cost in terms of land, labor, or climate risk?

And secondly, Green AI represents a unique opportunity for the Arab region. This region has a unique advantage. With abundant solar energy and a young, tech-savvy population, the Arab world can build "born-green" AI systems. These are systems designed to be efficient and sustainable from day one. Regional foundations and universities can also help define what responsible AI looks like, rather than just following global trends.



'Ultimately, AI wouldn't replace human decision-making but rather augment it'

Drawing on the Zayed International Foundation for the Environment's distinguished 25-year legacy of organizing influential events that have shaped global environmental dialogues and fostered vital partnerships, **Dr. Eisa M. Abdellatif, Chief Technical Advisor**, offers unique insights into leveraging innovation for a sustainable future. He elaborates on the critical role of Green AI in minimizing environmental impact, addressing pressing global challenges from climate change to biodiversity loss, and ultimately guiding humanity towards a deep partnership with the natural world.

The Zayed International Foundation for the Environment has a rich legacy of organizing multistakeholder conferences to address the pressing environmental challenges of the day. What is the impact of these events in raising environmental awareness and promoting sustainable development in the UAE and the wider MENA region?

Over the past 25 years, the Zayed International Foundation for the Environment has organized 100+ conferences, workshops, and webinars. The declarations and recommendations of these events have since been adopted by the UN and considered in its discussions and agreements on diverse environmental issues. These activities consistently attracted a diverse international participants base, with their global reach further amplified by comprehensive media coverage across numerous regions.

These events have fostered collaboration among government agencies, the private sector, academia and civil society, promoting a shared understanding of critical environmental challenges, including desertification, water scarcity, atmospheric pollution, chemicals management, etc. These events significantly increased policy focus on environmental issues,

fostered the development of regional partnerships, and facilitated the dissemination of innovative sustainable practices. It also led to heightened public awareness, encouraging community engagement and behavioral changes.

Ultimately, the Foundation's initiatives have helped integrate environmental considerations into development planning, supporting the region's transition toward more sustainable practices.

Why is Green AI important to the Foundation's agenda?

Green AI is crucial for promoting environmentally sustainable technological advancement. It focuses on developing and deploying Artificial Intelligence (AI) to minimize water and energy consumption and carbon footprint, while also enhancing environmental monitoring and driving innovative solutions essential for addressing ecological challenges and reducing environmental impact.

For the Foundation, integrating Green AI can enhance the efficiency of environmental monitoring, data analysis, and decision-making processes—helping to better manage natural resources, optimize renewable energy solutions, and support sustainable development initiatives in the UAE and MENA region. Emphasizing Green AI reflects a commitment to promoting new technology responsibly and sustainably in pursuit of environmental integrity.

What role does public awareness and engagement play in the successful implementation of Green AI initiatives, and how can organisations like the Zayed International Foundation effectively contribute to this?

Public awareness and engagement are crucial for the successful implementation of Green AI initiatives because they foster understanding, support, and responsible use of technology among communities, policymakers, and stakeholders. Informed public support can drive policy changes, encourage sustainable practices, and promote behavioral shifts that enhance the impact of Green AI solutions. Engagement also helps address concerns about data privacy, ethical use, and the environmental benefits of these technologies.

Organizations like the Zayed International Foundation can effectively contribute by conducting educational campaigns, hosting

workshops and conferences, and providing accessible information on the benefits and best practices of Green AI. They can also collaborate with media outlets and schools to raise awareness and advocate for policies that support sustainable technological development. Involving local communities and fostering dialogue ensures that Green AI initiatives are inclusive, transparent, and aligned with societal values, thereby boosting their overall success and sustainability.

What, according to you, are the most pressing environmental challenges where AI can offer truly transformative solutions?

Humanity currently faces critical environmental challenges—such as climate change, desertification, biodiversity loss, and plastic pollution—which collectively threaten life on Earth. Artificial Intelligence (AI) is therefore crucial for enabling swift detection, comprehensive and accurate monitoring, and agile decision-making to address these diverse crises.

Beyond technological solutions, what policy changes, regulatory frameworks, or international collaborations are essential to fully leverage AI for global environmental protection?

To minimize the environmental footprint, policies and regulatory frameworks must actively promote environmentally sustainable AI. International collaborations are also essential for integrating AI across diverse activities, facilitating the global exchange of knowledge and technological advancements.

Looking at the future, what is your boldest vision for how AI could reshape our relationship with the natural world and foster a more sustainable, harmonious planet?

This vision goes beyond simply optimizing resource use or monitoring pollution.

I believe AI would act as a sophisticated global nervous system for the planet, integrating vast streams of data from ecosystems, climate patterns, human activities, and even biological indicators. It would not only predict environmental shifts and crises (like extreme weather, biodiversity loss hotspots, or resource depletion) with unprecedented accuracy but also model the long-term consequences of various human interventions, guiding us towards the most harmonious path.

Imagine if AI could orchestrate large-scale ecological restoration projects with swarms of intelligent robots and drones, guided by AI, precisely planting trees, removing invasive species, or reintroducing native flora and fauna in degraded areas. AI would analyze soil composition, water availability, and genetic diversity to ensure the most resilient and effective regeneration strategies are implemented.

A future where AI can design "smart" infrastructure that mimics natural systems will help to minimize waste and maximize efficiency within urban and industrial environments. It would help in creating buildings that purify air, generate energy, and manage water cycles, seamlessly integrating human habitats with surrounding ecosystems, fostering biodiverse urban landscapes.

AI could foster a deeper human connection to nature by creating immersive, personalized educational experiences that translate complex ecological data into relatable narratives. It could help us understand the impact of our individual actions on specific species or ecosystems, fostering empathy and driving responsible behavior through personalized feedback loops and virtual interactions with the natural world.

I believe that by facilitating unprecedented global cooperation on environmental challenges, AI could help transcend political and economic barriers. It would identify shared solutions, allocate resources optimally, and track progress towards collective sustainability goals, enabling humanity to act as a unified steward of the Earth.

Ultimately, AI wouldn't replace human decision-making but rather augment it. By providing the insights, tools, and foresight necessary for humanity to evolve into a truly sustainable and integrated part of the natural world, the use of Green AI will allow us to move from an extractive relationship to one of deep partnership and custodianship.

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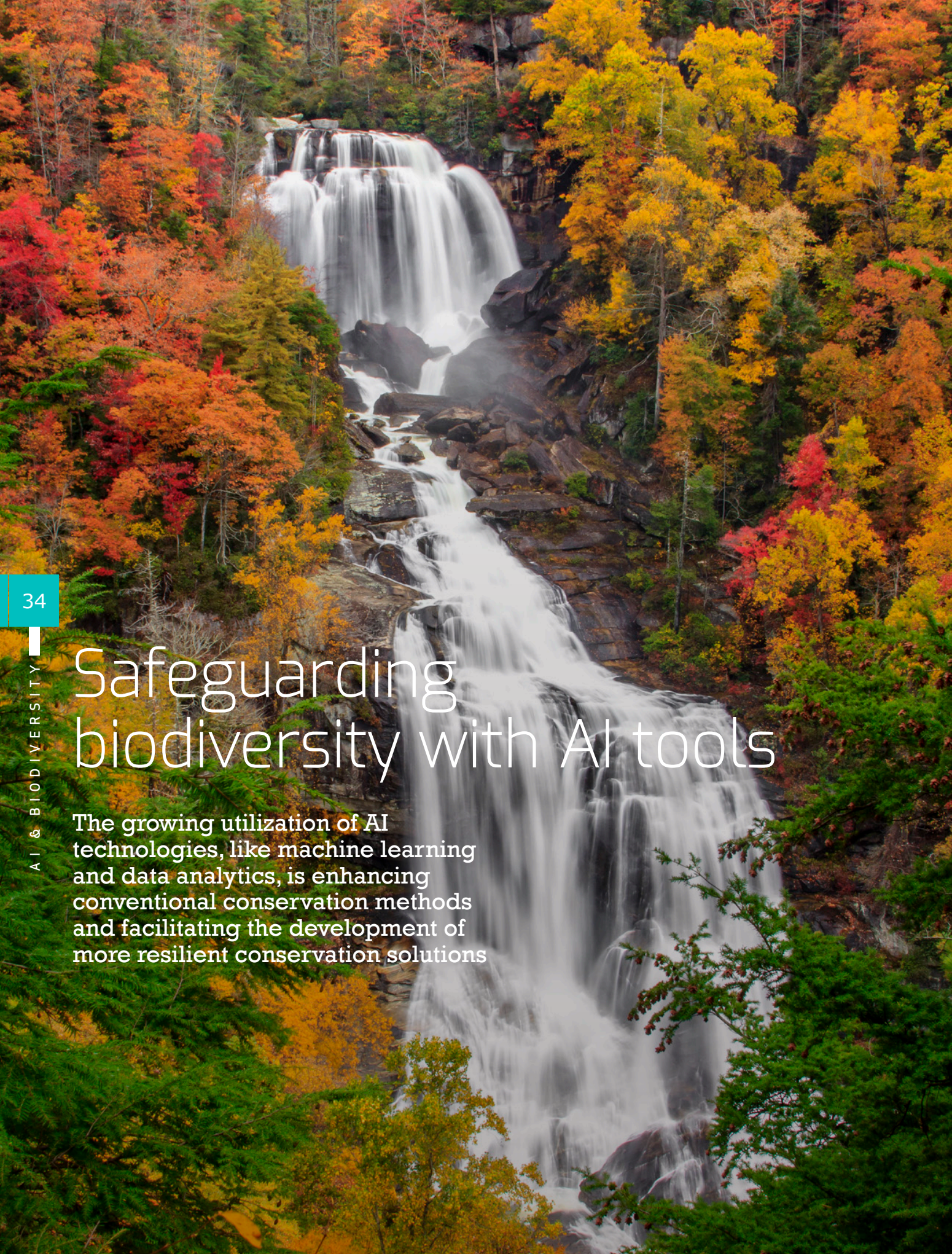


Safeguarding biodiversity with AI tools

The growing utilization of AI technologies, like machine learning and data analytics, is enhancing conventional conservation methods and facilitating the development of more resilient conservation solutions

Biodiversity, the result of 4.5 billion years of evolution, is rapidly on the decline. According to a study by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), up to one million species are today threatened with extinction, many within decades. A study by Brazil's National Institute of Space Research /Center of Earth System Science has found that irreplaceable ecosystems like parts of the Amazon rainforest are turning from carbon sinks into carbon sources due to deforestation. IPBES has also reported that around 85 per cent of wetlands, such as salt marshes and mangrove swamps, which absorb large amounts of carbon, have disappeared.

This accelerating loss of biodiversity globally presents an urgent challenge, threatening ecological balance, human well-being, and economic stability. The World Bank estimates that over half of global GDP is dependent on nature.

According to the UN, more than 1 billion people rely on forests for their livelihoods, and our land and oceans absorb more than half of all carbon emissions. Pressures such as habitat destruction, climate change, pollution, invasive species, and overexploitation contribute to this crisis. Therefore, the unprecedented rate and scale at which global biodiversity and ecosystem services are vanishing will have huge implications for economies and livelihoods everywhere.

International cooperation and policy frameworks such as the Convention on Biological Diversity are critical in mobilizing resources and addressing the challenges of biodiversity loss. However, effective biodiversity conservation requires advanced tools capable of processing vast datasets, identifying complex patterns, and informing targeted interventions. Artificial Intelligence (AI) is emerging as a significant technological enabler, providing novel approaches to enhance the understanding, monitoring, and

protection of Earth's biological diversity.

AI tools are used to automate data collection, support species identification, and analyse environmental data. AI-driven predictive models for biodiversity trends and habitat mapping further support the adoption of proactive strategies. This evidence-based information is valuable for identifying and protecting areas of high conservation priority and planning conservation interventions.

AI-powered tools like BioCLIP are already being used to detect species traits from images, aiding in species identification. The more advanced BioCLIP 2, trained on one of the most extensive biological datasets ever compiled, was able to recognise over a million species and understand relationships across the animal and plant kingdoms and reveal patterns that support conservation efforts.

Meanwhile, Automated Insect Monitoring (AIM) platforms, such as Antenna, have already identified hundreds of new insects. Through technologies such as high-resolution cameras, low-cost sensors, and AI-based processing methods, AIM is making insect monitoring less labour-intensive, more user-friendly, and more effective at determining the state of insect populations across the globe.

For law enforcement agencies, AI-powered technologies like sensors support wildlife monitoring and anti-poaching efforts, while advances in Environmental DNA (eDNA) sampling technologies have the potential to map species distributions more accurately than ever before. AI algorithms can also optimize interventions like reforestation and invasive species management, thereby increasing the efficiency and effectiveness of conservation efforts. By analyzing various ecological and socio-economic datasets, AI models can further identify priority areas for restoration and predict the efficacy of different intervention strategies to maximize biodiversity outcomes.

AI models are employed to simulate complex climate scenarios and their potential effects on ecosystems and species populations. This includes forecasting changes in phenology (seasonal biological events), predicting shifts in biome boundaries, and identifying vulnerable species or ecosystems at elevated risk due to climate change. These models contribute significantly to assessments like those provided

Predictive models help to prioritize areas for protection, identify corridors for wildlife movement, and develop proactive conservation strategies

by the Intergovernmental Panel on Climate Change (IPCC) and lead to the deployment of climate change adaptation strategies to enhance ecosystem resilience.

By integrating disparate data streams, including weather patterns, sensor telemetry, and satellite imagery, AI systems can develop early warning capabilities for ecological disturbances such as disease outbreaks, wildfires, or harmful algal blooms. This allows for timely response and mitigation, reducing potential ecological damage.

AI tools are enhancing citizen science initiatives by making data collection and species identification more accessible and accurate for non-expert participants. Rapidly analyzing vast amounts of biodiversity data enables scientists and policymakers to make better-informed decisions. However, the expanding utilization of AI in conservation calls for addressing ethical considerations, especially data privacy regarding indigenous knowledge and the prevention of algorithmic bias in conservation priority setting.

The application of AI in biodiversity conservation faces other challenges too. For instance, the availability and quality of ecological data remain critical constraints as datasets are often fragmented, inconsistent, or lack adequate annotation. The computational resources required for training complex AI models can be substantial, posing accessibility issues for certain conservation organizations.

Bridging the knowledge and practical gap between AI developers and conservation practitioners requires robust interdisciplinary collaboration. This will ensure that AI solutions are relevant, practical, and appropriately deployed in ecological contexts.

From green algorithms to sustainable infrastructure: The path to building a Green AI future

AI's rapid expansion is increasing environmental strain across vital resources

Artificial Intelligence is rapidly reshaping our world. Yet, its rapid advancement comes with a growing environmental footprint. The sheer computational demands of modern AI, particularly the training and deployment of sophisticated AI models, consume vast amounts of energy, generating substantial carbon emissions.

In a study, researchers at the University of Massachusetts, Amherst, have found that training a single advanced AI model can produce emissions comparable to those of five cars over their entire lifetime.

With companies frequently releasing newer, larger versions, the significant energy invested in training previous models is quickly rendered obsolete. Even experimental training iterations that never reach production consume massive energy. With GenAI now being used daily by millions, a GoldmanSachs report states that a single ChatGPT query needs nearly 10 times as much electricity to process as a Google search, leading to staggering global energy demands.

Data centers powering these systems frequently rely on non-renewable energy sources, exacerbating environmental degradation. The imperative for building systems that are not only intelligent but also ecologically responsible is clear, and the path toward ensuring technological advancement does not come at the planet's expense is already being paved with tangible innovations.

One key lies in algorithmic optimization with techniques like model compression and pruning, significantly decreasing computational costs and memory usage with minimal impact on accuracy. Beyond algorithms, the infrastructure supporting AI is undergoing a crucial transformation.

Major technology companies and hyperscalers like Amazon, Apple, Google, Meta and Microsoft are investing heavily in renewable energy sources for their data centers. Google, for instance, is partnering with Kairos Power to explore small modular nuclear reactors to power its AI data centers with carbon-free energy. Amazon, on the other hand, is piloting an AI-designed material aimed at removing carbon emissions from its data centers, directly addressing the environmental impact of AI infrastructure.

Deploying AI models directly on "edge" devices, such as smart sensors, also reduces the energy footprint associated with transmitting vast amounts of data to and from centralized cloud servers. Creative solutions even include repurposing discarded processing units to minimize electronic waste and extend hardware lifecycles, thereby lowering the carbon footprint associated with AI development.

Specific software tools are also aiding this shift and enabling more environmentally conscious design decisions. Tools like CodeCarbon that measure the carbon footprint of code empower developers to actively monitor and optimize their AI applications for lower emissions.

At several global summits held last year, researchers, academics and professionals dedicated to advancing the integration of AI and environmental sustainability have delved into the environmental costs of AI infrastructure, and emphasized the complexity of the Green AI challenge, while exploring AI's potential as a tool for positive change.

Energy consumption continues to be a primary concern as training and deploying AI models is still highly resource-intensive. Reducing this footprint will require continued development of more energy-efficient algorithms, hardware, and infrastructure. Equally important is the careful allocation of resources and widespread AI literacy. A collective understanding of both the promise and the pressing environmental responsibilities that come with this transformative technology is essential. Green AI's development and deployment should therefore be guided by shared values, robust policy, continuous innovation, and global cooperation.

Large models and data centers drive high energy, water, and e-waste demands

‘The Climate Advantage: How AI Can Help Governments Drive Better Climate Action’

In a new report, World Governments Summit highlights AI’s transformative role in accelerating government-led climate action through both mitigation and adaptation

A groundbreaking new report unveiled by the World Governments Summit Organisation, in collaboration with Accenture, outlines how artificial intelligence (AI) can empower governments to accelerate their climate agendas across key sectors.

“The Climate Advantage: How AI Can Help Governments Drive Better Climate Action” report comes at a pivotal time, as countries grapple with rising global temperatures and increasingly complex environmental challenges. It points out that since the ratification of the Paris Agreement in 2015, commitments from both developed and developing countries have increased nearly 18-fold although they are still not enough, considering the rising temperatures. 2024 was the hottest year on record, according to the World Meteorological Organisation, and the first year when the global average surface temperature exceeded 1.5°C.

Highlighting over 20 global case studies and drawing data from more than 50 countries with national AI strategies, the report identifies seven key domains where AI is already making a significant impact: policy formulation, climate modeling, sustainable agriculture, urban planning, energy management, citizen engagement, and government procurement.

Each domain is presented with a clear overview of AI's contributions complemented by concise government examples and detailed case studies highlighting broader impacts. These case studies represent a diverse range of experiences and best practices from across multiple continents.

As governments increasingly embrace digital transformation and AI, managing the climate impact of digital infrastructures like data centers becomes essential. The report therefore also provides strategies for operating sustainable data centers, underscoring their critical role in maintaining environmentally responsible AI applications. While AI is not a universal solution to all public sector challenges, its potential to advance climate strategies and help governments achieve sustainability goals is substantial.

Mohamed Al Sharhan, Managing Director of the World Governments Summit Organisation, affirmed that "the report comes at a time marked by rapid transformations in the development of artificial intelligence technologies and environmental challenges. This requires the creation of balanced opportunities, solutions, and policies that support government readiness and enhance their ability to achieve the highest levels of adaptation and balance amid global transformations, leading to the best possible outcomes."

Ramez T. Shehadi, Global Public Sector Strategy Lead, MEA Strategy and Consulting Lead at Accenture, stated, "AI has the potential to be one of the most powerful tools in our fight against climate change—but only if governments lead with bold vision and decisive action. The report provides governments with the roadmap to harness AI not only to protect our planet, but also to drive inclusive economic growth, improve public services, and build more resilient communities. Limiting emissions and planning for adaptation are crucial priorities for the world. Clearly, the future of climate leadership is digital— and the time to act is now."

> *The report presents global case studies highlighting the impact of AI in emissions monitoring, disaster prediction, improving agricultural productivity, and energy management*

Key insights from the report include: Climate TRACE data shows oil and gas emissions may be up to 3x higher than officially reported; Maharashtra, India, used AI to improve sugarcane crop yields by up to 40 percent while cutting

water and fertiliser use; Northumberland, UK's FloodAI provided real-time flood alerts, outperforming traditional forecasting models; Singapore's Green Data Centre Roadmap prioritises AI-powered sustainability standards, including mandatory renewable energy sourcing by 2027.

AI and Climate Response: Over 50 countries have national AI strategies, signaling strong global momentum toward public sector AI adoption. In a 26-country survey of government employees, 66% identified predictive analytics as AI's most promising use for climate applications.

AI in Agriculture: Abu Dhabi's AI-enhanced soil analysis improved coverage by 95% and predicted contaminants with 88% accuracy. In Kenya, an AI-driven crop advisory platform reached 1,500+ farms, delivering tailored insights via smart apps.

AI in Smart Cities and Infrastructure: The AI4Cities pilot in Finland and Norway cut energy use in public buildings by 15–20%; East Lansing (USA) reduced recycling contamination by 23% and improved participation by 45% through AI-powered waste systems.

AI in Energy Optimisation: AI-enabled solar forecasting in the UK (Open Climate Fix) improved accuracy by 2.8x over traditional methods, cutting unnecessary fossil fuel use; AI-powered grids like the US eGridGPT simulate live scenarios to help operators react to demand surges in real time.

AI in Citizen Engagement: The vTaiwan platform and Helsinki's UrbanistAI show how generative AI and digital twins can turn citizen input into tangible planning outcomes; ClimateQ&A AI chatbot answered over 30,000 public questions in multiple languages since March 2023.

AI-driven Supply Chain Transparency: SeloVerde (Brazil) monitors deforestation-linked supply chains over 20 million hectares, with the potential to prevent 739 million tons of CO_2 emissions by the end of the decade.

UAE is shaping global AI regulation: Omar Al Olama at BRIDGE Summit 2025

During a session titled "Order and Oversight in a World Run by Code", hosted at BRIDGE Summit 2025 in Abu Dhabi, Omar Sultan Al Olama, UAE Minister of State for Artificial Intelligence, Digital Economy, and Remote Work Applications, explored the profound transformation AI is driving across the global media landscape.

In conversation with renowned international moderator and journalist Ali Aslan at the world's largest debut media event, Al Olama underscored that the future belongs to those who embrace artificial intelligence rather than resist it, highlighting that hesitation toward technological change carries considerable risk. Referencing Netflix's acquisition of Warner Brothers, he illustrated how industry leaders are already reshaping their strategies to stay competitive in an AI-driven era.

He said, "Technologically enabled companies are going to absorb companies that are not technology enabled. A few decades ago, when people talked about streaming content on the internet, the blockbusters of the time - the cinema companies - saw this as something temporary that would go away, and it is now completely consuming all the different players and becoming the new behemoth in this domain."

He stated that the UAE, guided by the vision of its leadership, adopts a proactive approach and an exceptional model in developing policies related to artificial intelligence. This approach is driven by enhancing cooperation and partnerships between the government and the private sector to establish frameworks that ensure the responsible development, use, and efficient management of smart technologies, building on a successful cumulative experience and extensive expertise in managing technological transformations.

Al Olama said, "The rapid advancement of AI will reshape the skills required in the workforce market. In the coming years, we will witness the emergence of a new generation of professionals with diverse expertise and capabilities, positioning UAE companies not only to compete globally but to lead and shape the future of international markets."

Omar Al Olama emphasised the need to instill a deeper understanding within AI tools of the cultures and values of societies, in a way that ensures the preservation of their intellectual and knowledge heritage, and enhances conscious intervention and model testing to ensure the responsible use of these technologies.

Zayed International Foundation for the Environment

1999-2025 ZAYED INTERNATIONAL FOUNDATION FOR THE ENVIRONMENT: A Legacy of Environmental Leadership and Innovation

1999

Founded in accordance with the development philosophy and vision of the late Sheikh Zayed Bin Sultan Al Nahyan, under the patronage of H.H. Sheikh Mohammed Bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai

2000

Hosted the Dubai International Conference on Desertification in collaboration with UNEP and Secretariat of the United Nations Convention to Combat Desertification (UNCCD)

2001

Former US President Jimmy Carter becomes the first recipient of the Zayed International Prize for the Environment in the Global Leadership category

2002

Rallies efforts to strengthen international efforts on water resources in arid regions at the World Summit on Sustainable Development in Johannesburg, South Africa

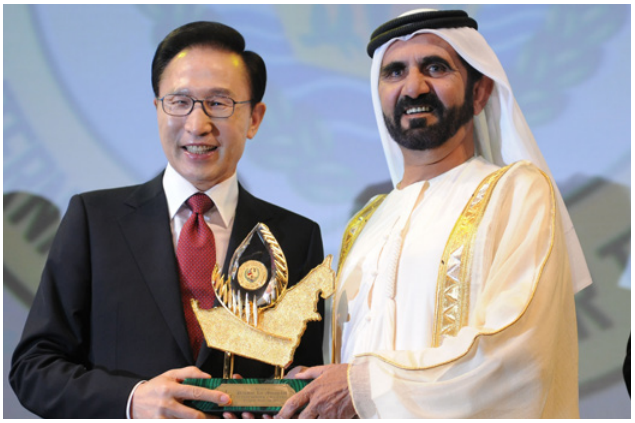
2004

British Broadcasting Corporation (BBC), UK, honoured in the Global Leadership category at the second cycle of the Zayed International Prize for the Environment

2001

2006

Kofi Annan, U.N. Secretary General, was awarded the Zayed International Prize at the third cycle of the awards



2011

• At the fifth cycle of Zayed Prize, President Lee Myung-bak of the Republic of Korea awarded the Zayed Prize for Global Leadership in environment

2008

Hosted the Dubai International Conference on Sustainable Construction at the Dubai Police Academy

2008

• Dr. Gro Harlem Brundtland of Norway awarded the Zayed International Prize for Global Leadership in environment

• Hosted the First Consultation Meeting for the Contaminated Sites Toolkit in partnership with UNIDO in Dubai

2010

Signed an agreement with Italy's Willy Brandt Foundation (FWB) to plan and implement initiatives for capacity building of the Gulf Region in the areas of environmental education, training and awareness raising, especially for youth and children

2011

• Launch of the 'Contaminated Sites Management Toolkit for Persistent Organic Pollutants (POPs) in collaboration with UNIDO

• Announced the launch of the AED 1 million Emirates Appreciation Award for the Environment

2012

As part of the official delegation of the UAE, Zayed International Foundation for the Environment attends the United Nations Conference on Sustainable Development (Rio+20), and later, COP18 in Qatar

2014

• His Serene Highness Prince Albert II of Monaco receives the award in the Global Leadership category at the 6th cycle of Zayed International Prize

2014

• His Excellency Lieutenant General Dhahi Khalfan Tamim, Deputy Chairman of Police and General Security in Dubai honored with Environmental Personality Award for outstanding contribution to environmental causes at the inaugural Emirates Appreciation Awards

2013

• Hosted the Arab Regional Implementation Meeting for the 20th session of the United Nations Commission on Sustainable Development in Dubai in association with the UAE Ministry of Environment and Water

• Signed a partnership and cooperation agreement with UNEP in Nairobi, Kenya

• Honored with a Certificate of Recognition by UNIDO for the Foundation's contributions in the preparation of the Contaminated Sites Management Toolkit for POPs

• Participated in the Global South-South Development Expo in Nairobi, Kenya

2014

• Zayed International Foundation and UNEP released the Arabic version of Building Inclusive Green Economies, which presents real-life case studies from two dozen countries

• Signed new partnership with UNEP to promote Education for Sustainable Development and Sustainable Lifestyles

2016

• H.E. Mohammed Ahmed Al Bowardi, State Minister of Defense & CEO of Environment Agency Abu Dhabi, is honored as Environment Personality at the 2nd cycle of the Emirates Appreciation Award for the Environment

• Signed a new agreement with UNEP to produce an international textbook on inclusive green economy

• Participates in the second session of the United Nations Environment Assembly (UNEA-2) in Nairobi, Kenya

• Participates in the fifth biennial High-level Meeting of the Development Cooperation Forum (DCF) held at the UN Headquarters in New York as part of the High-level Segment of the United Nations Economic and Social Council (ECOSOC)

• Hosted the eighth annual United Nations Global South-South Development Expo (GSSD Expo)

2017

• Dr. Meshgan Al Awar, Secretary General of the Zayed International Foundation for the Environment, delivered two keynote addresses at The International Conference on Sustainable Development in Higher Education 2017 in Hong Kong

• 'The Zayed Prize Green Challenge' smart app was launched to mark World Environment Day

2018

Zayed International Foundation launches Year of Zayed celebrations in India, Malaysia, and Sudan, and hosts a commemorative event at the UN Secretariat in New York

Launched a special edition of UNOSSC's South-South in Action report at the World Green Economy Summit 2018 and announced its translation into Arabic to benefit more countries

2020-2021

Leveraged digital platforms during the outbreak of COVID-19 to reach a wider audience and open new avenues for global collaboration and knowledge-

sharing. Hosted a series of webinars and fostered a virtual community dedicated to environmental stewardship.

2022

The Zayed International Foundation for the Environment explored areas of mutual collaboration and partnership opportunities in the field of environment and sustainable development with a high-level delegation from the Republic of Rwanda

2023

• With a leading group of environmentalists and scientists, the Zayed International Foundation explored the roadmap to a better future by hosting its '1st World Café' under the slogan, 'Wisdom Fueling the Future!

• The Zayed International Foundation hosted two sessions at the 28th Conference of the Parties (COP28) to the United Nations Framework Convention on Climate Change (UNFCCC) at Expo City Dubai, delivering on its commitment to raising awareness on climate challenges and solutions

2024

• The Zayed International Foundation hosted a group of students and faculty leaders from PACE Academy in Atlanta, Georgia, USA, as part of its educational outreach programme

• In partnership with the Adi Shankara Group of Institutions in Kerala, India, the Zayed International Foundation announced a pioneering agro-educational initiative to integrate innovative and sustainable agricultural practices with education in line with the UN SDGs

• The Zayed International Foundation and the United Nations Office for South-South Cooperation (UNOSSC) announced a landmark agreement at COP29 in Baku, Azerbaijan, to drive sustainable development through South-South and triangular cooperation

2025

• Zayed International Foundation for the Environment participates in a three-day global conference on Lifelong Learning and Sustainable Future, held at the Adi Shankara Institute of Engineering and Technology in Kerala, India

• The Zayed International Foundation partnered with Morocco-based Riad Al Fan Foundation for Art and Environment to drive the message of environmental sustainability through a carefully curated art exhibition at World Art Dubai

• The Zayed International Foundation hosted the inaugural 'Art and Environment' exhibition at the Historica art gallery in Dubai from May 24 - May 31

AI Office launches 'Teachers Track' to empower national talent in future technologies

The Artificial Intelligence, Digital Economy, and Remote Work Applications Office, in collaboration with Microsoft, has launched the "Teachers Track" as part of the "One Million AI Talents" initiative announced by H.H. Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum, Crown Prince of Dubai, Deputy Prime Minister and Minister of Defence.

The initiative aims to train one million individuals in artificial intelligence skills across the UAE by 2027.

The newly launched track coincided with UAE Codes Day 2025 and seeks to empower educators with AI concepts, enhance their understanding of AI tools, and enable them to harness the potential of AI. It also supports the education sector's efforts to enhance learning outcomes in line with the UAE's national vision to build a generation of teachers capable of leading digital transformation in education.

Saqr Binghalib, Executive Director of the Office of Artificial Intelligence, Digital Economy, and Remote Work Applications, stated that the initiative reflects the UAE's vision of empowering educators to keep pace with technological transformations, enhance their capabilities, and equip them with future tools. He emphasised that leveraging artificial intelligence in education contributes to achieving national digital transformation goals.

Binghalib further highlighted that teachers are the cornerstone of building generations and shaping the future, and that providing them with knowledge and modern technologies enables them to inspire students toward innovation. He added that integrating AI can lead to a qualitative leap in teaching and learning methods, strengthening the UAE's position as a global hub for innovation and knowledge.

The Teachers Track is designed to align with the professional requirements of educators and the school environment, aiming to enhance efficiency and encourage innovation in teaching methods. It features successful pioneering models of AI use in education, along with practical strategies for integrating AI into lesson planning, assessment, and student engagement.

Interested participants can register and take part via the following link: https://ai.gov.ae.

2025 environmental milestones spotlight the UAE's growing standing as a global leader in sustainability, AI

By expanding renewable energy projects across several continents, the UAE is developing solar, wind, and hydrogen plants to provide clean electricity to millions of people

A series of domestic and global achievements have distinguished 2025, the Year of Community, under the UAE's wise leadership.

The UAE strengthened its active presence on the international stage, consolidated its position as an influential economic power regionally and globally, and continued its distinctive contributions across various fields of humanitarian work.

Domestically, a number of high-quality achievements emerged, providing new momentum to the nation's sustainable development path.

The UAE reinforced its leading position in environmental sustainability through a range of local and international achievements. These included announcing a first-of-its-kind marine exploration voyage to conduct a comprehensive

survey of seabed geology in the country's waters and developing a geospatial data platform for agriculture and water resources.

In 2025, the Environment and Protected Areas Authority (EPAA) in Sharjah announced the official inclusion of Khor Kalba Mangrove Centre in the Wetlands Link International (WLI) network, a specialised global network supporting environmental education centres focused on wetland conservation.

The Mohamed bin Zayed Water Initiative launched the "Al Miyah Challenge" to accelerate the development and deployment of innovative water solutions. Al Miyah Challenge for Agriculture is the first in a series of competitions to be launched as part of the Initiative's Al Miyah Challenge programme.

The Environment Agency – Abu Dhabi (EAD) launched the "Abu Dhabi Coral Garden" initiative. The largest project of its kind in the Middle East, it is a significant step in protecting the marine environment and enhancing marine biodiversity in Abu Dhabi.

Sharjah launched "SANA," the first solar power plant in the emirate. This new facility covers a large area of 850,000 square meters and can produce 60 megawatts of energy.

The UAE also announced an increase in the area of nature reserves in Abu Dhabi to 20% of the emirate's total area.

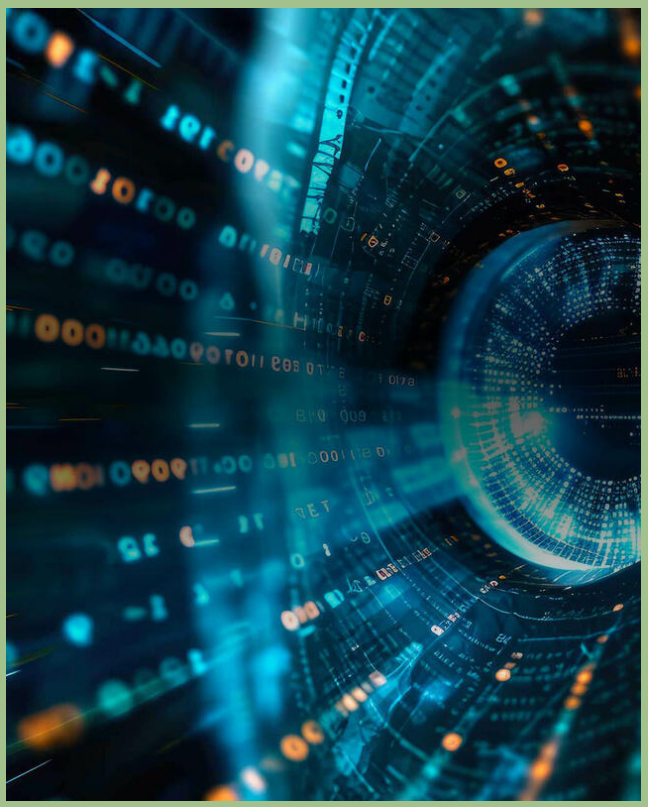
The UAE broke ground on a project combining a 5.2 GW solar PV plant with a 19 GWh battery energy storage system in Abu Dhabi, making it the world's largest solar and battery storage project to provide 1 GW of clean, 24/7 baseload power. The project is a significant development for the UAE's clean energy transition and commitment to sustainability.

The UAE also continued expanding renewable energy projects across several continents through Masdar and other national companies, developing solar, wind, and hydrogen plants in multiple countries such as Saudi Arabia, Spain, Indonesia, Africa, Yemen, and Egypt—helping provide clean electricity to millions of people.

> *The usage rate of AI tools in the UAE reached 97% - the highest globally - while the number of programmers exceeded 450,000*

The UAE took rapid steps toward AI-driven transformation and the establishment of an advanced and sustainable digital ecosystem, accelerating efforts toward becoming one of the world's most advanced AI nations.

The usage rate of AI tools in the country reached 97%—the highest globally—while the number of programmers exceeded 450,000.



Abu Dhabi also witnessed the launch of the comprehensive UAE–US AI campus with a capacity of 5 gigawatts, the largest of its kind outside the United States.

The UAE-France Framework for Cooperation in Artificial Intelligence was launched to boost collaboration in AI development, including plans to build a 1GW AI Campus in France and develop advanced infrastructure like data centers and supercomputing facilities.

UAE-based MGX, in cooperation with BlackRock and Microsoft, also announced the joining of Nvidia and xAI to the "AI Infrastructure Partnership." The goal is to invest in next-generation data centres and advanced energy solutions, with potential total investments reaching USD 100 billion.

In the same context, the UAE Cabinet has approved its support of Google Cloud's launch of its first Global Cyber Security Centre of Excellence in Abu Dhabi – an initiative that underscores the UAE's commitment to advancing digital transformation and bolstering cybersecurity. It will support over 20,300 specialised cybersecurity jobs and strengthen the national cybersecurity ecosystem.

At the G20 Summit, the UAE announced the launch of the AI for Development initiative, worth USD1 billion, to support and finance artificial intelligence projects in African countries.

The UAE was keen to update its legislative and regulatory framework by issuing several decrees, laws, and decisions. The UAE announced four new visit visa categories: AI specialists, entertainment, events, and cruise tourism. In addition, the UAE launched the first smart legislative system based on artificial intelligence.

The UAE also approved the national AI system as an advisory member of the Cabinet, the Ministerial Development Council, and the boards of directors of all federal entities and government companies, starting in January 2026.

UAE's first AI-designed business complex launched in Sharjah

Al Marwan Developments has launched its pioneering project, "District 11", the UAE's first smart work resort designed using artificial intelligence, setting a new benchmark for urban innovation and economic vitality in Sharjah and the wider UAE. The project embodies the future of integrated city living, combining advanced smart infrastructure with a human-centric design philosophy that supports businesses, communities, and sustainable growth, while directly contributing to the nation's diversification agenda.

District 11 provides an ideal ecosystem for investment and commercial ventures, and meets the growing demand for modern, premium-grade offices. Extending across 3.5 million sq ft distributed over 11 buildings, it also includes a world-class hotel with 368 units and around 3,000 parking spaces.

Strategically located on Sheikh Mohammed bin Zayed Road (E311) near major residential communities, the airport, and University City, the project integrates strategic location, smart technologies, sustainability, and business efficiency within a unified ecosystem, offering a future-ready, cost-effective work environment and an ideal platform for companies to grow and expand.

Majd Al Zaiem, Executive Director of Al Marwan Developments, said: "District 11 represents a qualitative leap in Sharjah's real-estate landscape. The project was designed with intelligent infrastructure and global design expertise to create a vibrant business environment that bridges current investor needs with the ambitions of future entrepreneurs."

Al Zaiem noted that the role of artificial intelligence in District 11 goes beyond smart systems, extending to more dynamic pricing, proactive facilities management through predictive maintenance, and energy optimization, enhancing asset efficiency and improving customer experience. This positions the project at the forefront of digital transformation in the real-estate sector, supported by governance technologies that strengthen reliability, competitiveness, and return on investment.

He affirmed that District 11 will contribute to enhancing Sharjah's position on the regional and global investment map by attracting companies and entrepreneurs seeking a smart and sustainable workplace, and by promoting economic diversification through direct and indirect business and employment opportunities.

AI solutions set to transform global water security amid looming water crisis

People living in low-income countries, fragile contexts, rural communities, children, and minority ethnic and indigenous groups face the greatest disparities in access to safe drinking water

A new report by WHO and UNICEF reveals that 1 in 4 – or 2.1 billion people globally – lack access to safely managed drinking water, including 106 million who drink directly from untreated surface sources. Meanwhile, the availability of renewable water per person has declined by 7 per cent over the past decade, and pressure on already scarce freshwater resources is increasing in several regions, according to the latest 2025 AQUASTAT Water Data by FAO.

A World Economic Forum report warns that 5 billion people could face severe water shortages by 2050, costing global GDP 31%. This highlights how climate change is affecting the world's water resources, reinforcing the urgent need for water innovation. Unpredictable weather patterns and diminishing reserves are further exacerbated by climate change, rapid population growth, and inefficient management practices, disproportionately affecting water-stressed

regions and jeopardizing public health, agricultural productivity, and economic stability.

With conventional water research and management methods failing to stem this tide, smarter, innovative approaches become essential to address the ongoing challenge. A World Bank report states that in the Middle East and North Africa (MENA) region, the amount of water available per capita annually will fall below the absolute water scarcity threshold of 500 cubic meters per person, per year, while the annual water demand is expected to rise by 25 billion cubic meters by 2050.

Apart from ongoing resource management strategies and institutional reforms to ease water stress globally, Artificial Intelligence (AI) is increasingly seen as a critical enabler for smarter, more sustainable water management. AI's sophisticated tools and analytical capabilities can transform water management, optimise limited resources, enhance smart water governance, and ultimately support global water security.

Experts agree that AI's unparalleled ability to collect, process, and interpret vast quantities of complex data will offer clear insights into intricate water systems. Advanced sensors deployed in rivers, lakes, reservoirs, and underground aquifers continuously monitor water quality, flow rates, and levels, feeding real-time data into AI algorithms.

Satellite imagery, combined with AI-driven analysis, provides comprehensive overviews of crucial hydrological indicators like snowpack, glacier melt, agricultural water usage, and groundwater depletion across extensive geographic areas. Machine learning models, trained on historical hydrological data, meteorological forecasts, and climate models, can predict future water availability with remarkable accuracy, accounting for factors like rainfall, temperature, and evaporation rates.

This predictive capability is crucial for regions facing scarcity, allowing authorities and communities to anticipate droughts or floods, allocate resources more effectively, and implement proactive conservation strategies rather than reactive crisis management. Decision-makers are thus empowered with the foresight needed to manage this vital resource more sustainably and directly address long-standing inefficiencies and vulnerabilities.

Goal 6 of the UN's Sustainable Development Goals is ensuring the availability and sustainable management of water and sanitation for all

In agriculture, which accounts for approximately 72% of global freshwater withdrawals in many areas, AI-powered smart irrigation systems can

optimize water use by precisely determining when and how much water crops need. These systems integrate data from soil moisture sensors, weather forecasts, and crop health monitoring via drones, delivering water directly to plant roots and significantly reducing waste from over-irrigation or evaporation. This precision drastically lowers water consumption while simultaneously improving crop yields and quality, offering a vital lifeline to agricultural sectors in arid lands.

Beyond agriculture, AI algorithms are revolutionizing urban water infrastructure by identifying and predicting leaks in vast pipeline networks. AI-driven acoustic sensors and pressure monitors can pinpoint the exact location of leaks, often before they become visible, facilitating rapid repairs and conserving millions of liters of water. This proactive maintenance, moving from reactive responses to anticipatory action, significantly enhances the longevity and efficiency of critical water assets, reducing costly failures and service disruptions.

A 2025 whitepaper published by Xylem, a leading global water solutions company, states that by adjusting processes in real time, including reagent dosing and treatment line control, AI will improve the operational resilience of treatment plants. Predictive systems will also automatically adjust critical processes to meet stricter environmental standards and improve energy efficiency by adjusting operations according to demand. Demand forecasting is another key trend. By accurately anticipating consumption peaks, AI algorithms can support automatic adjustments in water distribution and storage.

AI innovations are empowering policymakers to make data-driven decisions and enhance long-term resilience. For instance, the International Water Management Institute (IWMI), supported by Google, has launched platforms using AI and satellite imagery to improve wastewater reuse while digital twins of water systems are being

deployed to simulate infrastructure performance and test interventions in real-time before implementation.

AI's impact on water security is not limited to technical efficiency alone. It has a profound bearing on humanity, leading to improved public health, as reliable access to clean water reduces waterborne diseases and improves sanitation. For communities in developing nations, predictable water availability can free up time spent on water collection, allowing for increased educational and economic opportunities, particularly for women and girls, according to a 2020 report by WHO and UNICEF.

Economically, greater water security underpins agricultural stability, supports industrial growth, and safeguards livelihoods dependent on water resources. By mitigating water-related conflicts

Approximately 10 percent of the global population lives in countries with high or critical water stress

and fostering resource-sharing frameworks based on objective AI-driven data, AI can also contribute to geopolitical stability in regions prone to water disputes. In an article titled, 'AI in the Water Sector: Opportunities, challenges and what comes next', the Australian Water Association states that AI-powered tools can also enhance customer service in the water sector by providing personalized information, managing inquiries, and offering tailored advice on water conservation, fostering greater public engagement and responsible usage.

Navigating misinformation and disinformation in Environmental Science in the age of AI

Climate change is accelerating, and so is the spread of false narratives, now at the speed of AI

In the age of artificial intelligence, the way we seek and receive information has transformed. What once involved diligent research in a library is now often a quick query to an AI-powered conversational platform. Yet, as these tools become central to our information ecosystem, their reliability on critical subjects like environmental science is under intense scrutiny. What is of concern is that these models do not always provide accurate responses; they can 'hallucinate' data or generate fabrications. This is a major problem in an age already grappling with widespread misinformation, especially when users overly trust AI-generated outputs.

A recent Global Witness investigation, which tested popular AI chatbots – ChatGPT, MetaAI and Grok –has revealed that some of the AI chatbots shared climate disinformation tropes, amplified climate denial influencers, and engaged in greenwashing AI's contributions to climate change.

Such widespread circulation of falsehoods about environmental science directly influences public behavior and policy support. As witnessed during global health crises, misinformation can deter trust in scientific guidance. This logic applies equally to environmental issues and global researchers have found that misinformation and conspiracy theories about wind energy farms are already affecting the expansion of renewable energy negatively.

Wind farms are fertile ground for conspiracy theories as they are highly visible symbols of climate policy, unlike mines, oil fields, and nuclear plants, which are not in the direct line of vision of the common public. A row of wind turbines has thus become a target for fears about modernity, energy security or government control. Popular narratives that wind turbines are poisoning groundwater or causing blackouts lack any scientific basis but when false information is spread deliberately to mislead, it erodes public trust in scientific consensus, fuels polarization, and ultimately hinders urgent climate solutions.

Amplifying and Combating Misinformation

The very attributes that make AI powerful—its speed, scalability, and ability to generate human-like content—also render it a potent tool for spreading climate misinformation. Trained on vast datasets from the internet, including biased or outdated information, these platforms can unintentionally amplify falsehoods.

A study by the Center for Countering Digital Hate found that a prominent AI chatbot generated misinformation in 78 out of 100 tested narratives, including all 10 climate-related narratives presented. This indicates that millions of people who use popular large language models could unwittingly be exposed to AI-generated misinformation or exploited to create disinformation. With minimal input, AI can craft convincing conspiracy theories, complete with fabricated evidence and emotionally charged language, quickly disseminating them across digital platforms where engagement, not accuracy, drives visibility. This reliance on AI without critical vetting also weakens media literacy and critical thinking skills, making individuals more susceptible to digital deception.

However, AI can also be a vital part of the solution.

> AI agents can engage with content: reacting, commenting and sharing via fake accounts to boost content in algorithms

Researchers are developing AI-powered fact-checking tools designed to identify and debunk climate misinformation. One such project, CARDS (Computer Assisted Recognition of Denial and Skepticism), led by John Cook at the Melbourne Centre for Behaviour Change, uses a "fact-myth-fallacy-fact-debunking" structure to counter narratives. Trained on data sourced directly from climate skepticism blogs, the tool has demonstrated nearly 90% accuracy in detecting misinformation. This innovation highlights how AI can be repurposed to combat disinformation.

Further research, presented by Erik Nisbet and colleagues at the AAAI Conference on Artificial

Intelligence in February 2024, indicated that while general-purpose large language models struggle with the nuances of climate misinformation, models specifically fine-tuned on expert-curated climate data significantly improve classification performance. This underscores the need for expert guidance in developing AI tools for this domain, though it also reveals computational constraints faced by organizations without vast resources, highlighting a need for more accessible, open-source solutions.

Clearly, a passive approach to AI's role in the information landscape is insufficient. Regulation is crucial; legal scholars specializing in AI and platform governance have proposed implementing standards where platforms are held accountable for knowingly publishing false information. Beyond policy, widespread AI literacy is paramount. This includes understanding AI's mechanisms, its potential for error, and its environmental footprint. Adopting practices like journalistic double sourcing and prioritizing peer-reviewed information are essential steps to limit the spread of AI-generated falsehoods. The fight against climate misinformation is not just a technological challenge; it is a fight for a livable future, demanding that we harness AI's potential responsibly and ensure access to truth.

UAEREP highlights AI's role in rain enhancement at ICADAA 2025

The UAE Research Programme for Rain Enhancement Science (UAEREP) participated in the First International Conference on AI and Data Science Applications and Advances (ICADAA), held at Emirates Aviation University in Dubai. The event brought together leading experts, researchers and AI and data science professionals from both the industry and academia to discuss how AI and data science can address real-world challenges across multiple sectors.

Dr. Abdulla Al Mandous, President of the World Meteorological Organisation (WMO) and Director-General of the National Centre of Meteorology (NCM), said, "Through this programme, NCM strives to integrate meteorological science with emerging technologies, including AI and data-driven solutions, to address global water security challenges in alignment with the UAE's climate resilience objectives.

"By collaborating with leading experts and institutions, we aim to develop innovative, science-based approaches that enhance rain enhancement capabilities, and support sustainable development worldwide."

During the conference, Alya Al Mazrouei, Director of UAEREP and Director of Research and Weather Enhancement Department at the National Center of Meteorology (NCM), presented UAEREP's achievements, technological infrastructure, awardee projects, scientific contributions, and global partnerships and outreach, among others.

In her keynote address, Al Mazrouei said, "UAEREP's participation at ICADAA demonstrated how AI and data science are transforming rain enhancement research. These technologies enable advanced forecasting, cloud microphysics modeling, and data-driven interventions that improve water security in arid and semi-arid regions such as the UAE."

UAEREP's projects integrate AI-driven forecasting, machine learning algorithms, and cloud microphysics modeling to improve rainfall enhancement techniques. The program also employs advanced technologies such as nanomaterials, unmanned aerial systems, and laser-based interventions, supported by high-performance computing and big data analytics. These innovations enable precise targeting, optimized seeding operations, and scalable solutions for water security in regions most vulnerable to water scarcity challenges.

UAE launches new AI ecosystem for global agricultural development

The new global agricultural innovation platform aims to support smallholder farmers worldwide most affected by climate volatility and is built on four major initiatives, expanding the UAE–Gates Foundation partnership announced at COP28

The UAE has launched Abu Dhabi's AI Ecosystem for Global Agricultural Development, a platform designed to bring AI solutions to climate-exposed agricultural regions and support the communities most affected by shifting weather patterns.

The launch builds on the USD200 million UAE–Gates Foundation partnership announced at COP28 to accelerate agricultural innovation.

With two years of progress and the partnership continuing to advance, the announcement was made in the presence of Mariam Almheiri, Head of the International Affairs Office at the UAE Presidential Court, and Bill Gates, Chair of the Gates Foundation.

Following the announcement, Almheiri and Bill Gates joined the UAE–Gates Partnership Showcase, which provided an immersive overview of the ecosystem's core pillars, demonstrating how Abu Dhabi's research and technological capabilities, and AI leadership are supporting vulnerable agricultural communities around the world.

These capabilities come together through four landmark initiatives: the CGIAR AI Hub, the Institute for Agriculture and Artificial Intelligence (IAAI), AgriLLM, and The Agricultural Innovation Mechanism for Scale (AIM for Scale).

Mariam Almheiri, Head of the International Affairs Office at the UAE Presidential Court, said: "The UAE is harnessing AI for global good, to help protect the farmers and communities most exposed to climate volatility. By connecting our national research and AI capabilities with leading global partners, we are turning science into real tools that reach people on the ground.

"Through our partnership with the Gates Foundation, we are advancing Agri-AI solutions that support millions of smallholder farmers facing unpredictable weather, helping secure a more stable and hopeful future for communities worldwide."

Bill Gates, Chair of the Gates Foundation, added: "Around the world, smallholder farmers are facing the harshest impacts of climate change with the fewest tools to adapt. The AI for Agriculture Ecosystem helps change that by putting practical, data-driven solutions directly in farmers' hands. I'm grateful for the UAE's leadership. This initiative helps strengthen food security and support farmers in a warming world."

The AI for Agriculture Ecosystem is built upon a collaborative network that includes the International Affairs Office at the UAE Presidential Court, three Abu Dhabi-based institutions; Mohamed bin Zayed University of Artificial Intelligence (MBZUAI), NYU Abu Dhabi, and ai71, alongside key international partners including the Gates Foundation, CGIAR, and the World Bank.

Together, these partners form a unified system that turns advanced research and AI capabilities into practical solutions for farmers, governments, and development actors. This system spans the full chain of innovation from scientific discovery to digital advisory, open-source agricultural AI models, and field deployment in climate-vulnerable regions.

These initiatives are:
CGIAR AI Hub: A global collaborative workspace hosted in Abu Dhabi by ai71 as a core technology partner. It is set to revolutionize agriculture by driving digital transformation and innovation. The hub aims to establish Abu Dhabi as a leading

center for AI in agriculture, leveraging over 50 years of CGIAR's extensive agricultural data and expertise from its 13 global research centers and partner networks.

"The AI Agriculture Ecosystem is rooted in science and powered by global collaboration," said Ismahane Elouafi, CGIAR's Executive Managing Director. "By combining AI expertise, and insights from global partners, the AI Agriculture Ecosystem can develop innovations that strengthen decision-making, guide policies and investments, and accelerate the adoption of digital tools – supporting vulnerable communities in the Global South and farmers in the Global North facing similar challenges."

Institute of Agriculture and Artificial Intelligence (IAAI): Based at MBZUAI in Abu Dhabi, the IAAI is a new pioneering digital advisory hub for agriculture that offers digital advisory tools, training programs, and technical assistance teams to governments, NGOs and partner organizations. The hub is dedicated to strengthening global food security by improving the lives and livelihoods of over 43 million smallholder farmers.

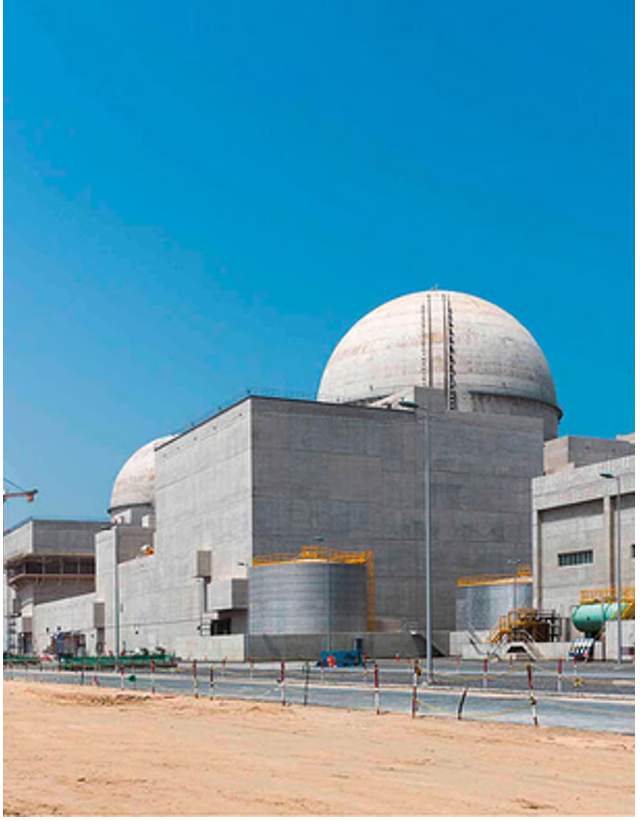
AgriLLM: It is an open-source large language model developed by ai71 in Abu Dhabi and designed to advance global agricultural intelligence. It is trained on deep agricultural data, including 150,000 agricultural documents, 50,000 research papers, and 120,000 real farming questions and answers, and is designed for multilingual understanding. Four AI agents by AgriLLM are currently being tested with partners, demonstrating how the model can deliver region-specific, role-based guidance for climate adaptation, resource management, and food production. The entire AI-enabled model will be released as a public good, free for anyone to use, modify, or build upon.

AIM for Scale: An initiative jointly funded by the UAE and the Gates Foundation. It is based at NYU Abu Dhabi. It is driving global efforts to deliver AI-powered weather forecasting and digital advisory services to smallholder farmers.

At COP30, AIM for Scale announced a shared ambition with its partners to reach 100 million farmers by 2030. This ambition is already backed by real progress: in 2025, the Government of India delivered AI-powered monsoon forecasts via SMS to 38 million farmers, the largest such deployment to date.

Building on this momentum, MBZUAI and the University of Chicago launched an AI Weather Forecasting Training Program in Abu Dhabi, training officials from Bangladesh, Chile, Ethiopia, Kenya, and Nigeria, with plans to expand to 25 more countries by 2027.

New UAE partnership to advance nuclear reactor safety through AI innovation



Khalifa University of Science and Technology has signed a strategic agreement with independent, non-profit energy R&D institute EPRI to develop an AI-based Uncertainty Quantification (UQ) framework to enhance safety analysis for advanced water-based nuclear reactors.

The project will combine cutting-edge AI with high-fidelity computational fluid dynamics (CFD) simulations to improve reactor reliability and regulatory compliance. It focuses on creating predictive machine-learning models to quantify uncertainties in thermal-hydraulic phenomena. These advancements could support licensing and operational safety for next-generation nuclear power plants, including APR1400 and Small Modular Reactors (SMRs).

Professor Ebrahim Al Hajri, President, Khalifa University, said, "The collaboration with EPRI underscores our commitment to pioneering research in the UAE that strengthens peaceful nuclear energy, safety and sustainability. Khalifa University already houses advanced AI expertise and infrastructure that could be utilised for the joint project. By integrating AI with advanced simulation techniques, we aim to deliver transformative solutions for the global energy sector."

Arshad Mansoor, EPRI President and CEO, said, "This collaboration with Khalifa University represents a significant step toward integrating advanced AI techniques into nuclear safety analysis. Importantly, this initiative builds on the strong foundation of local support from the Emirates Nuclear Energy Corporation (ENEC) in Abu Dhabi, reinforcing the UAE's leadership in safe, sustainable nuclear energy. Our joint efforts will help ensure safer, more efficient nuclear power systems that meet rigorous regulatory standards worldwide."

Khalifa University's Emirates Nuclear Technology Centre (ENTC), in close collaboration with EPRI, will play a key role in this project. The project team includes Professor Yacine Addad, Deputy Director of ENTC and Principal Investigator and Dr. Antonio Cammi as Co-Investigator, along with EPRI researchers Dr. YJ Choi, Dr. Hasan Charkas, and Dr. Andrew Ceto.

The two-phase initiative encompasses model development, full-scale simulations, and integration with EPRI's nuclear accident analysis code to enhance its modeling capabilities. Phase 1 will define safety-relevant phenomena, review AI/ML methodologies, initiate framework development, and deliver an interim report, while Phase 2 will conduct full-scale CFD simulations, complete framework development, apply the framework to quantify uncertainties, and deliver the final report.

Partnership formed to accelerate AI-powered indoor farming in the UAE

Silal's Innovation Oasis and global agri-tech company Square Roots collaborate to accelerate climate-smart agriculture via AI-powered research, controlled-climate systems, and next-generation crop science

Silal's Innovation Oasis (iO), the state-of-the-art research and development hub in Al Ain designed to transform agricultural technology, has signed a landmark collaboration agreement with Square Roots, a global agritech company specialising in modular controlled-climate farming and AI-powered cultivation systems, to advance climate-smart agriculture and accelerate breakthrough solutions for desert farming.

The partnership represents a major step forward in the UAE's efforts to strengthen food security, enhance water efficiency and build a next-generation agricultural innovation ecosystem. The agreement combines Innovation Oasis's desert agriculture expertise with Square Roots' global leadership in controlled-climate farming, indoor crop science and AI-enabled agricultural applications.

Under the agreement, Square Roots will deploy a multi-zone, fully cloud-connected, artificial intelligence-powered research facility on the iO site. The facility will serve as a national testbed for fast-tracking innovation in indoor and desert farming by enabling parallel trials on desert-adapted crops, low-light genetics, modular indoor farming systems and generative AI technologies tailored for agriculture. The collaboration also

aims to accelerate the commercialisation of resource-efficient farming solutions for adoption across the UAE.

The initiative will advance several core innovation tracks, including the development of low-light crop genetics to support indoor farming with up to 40% lower energy consumption, building on Square Roots' internationally recognised research supported by the Gates Foundation.

The collaboration will also identify and test new strategic crops suited to desert environments, expand the diversity of locally grown produce, and develop a suite of AI-powered tools to enhance productivity and optimise resource use. In addition, Square Roots' globally renowned "Next-Gen Farmer Training Program" will be localised to equip Emirati scientists, agronomists and growers with advanced technical expertise.

To further support the UAE farming community, Square Roots will adapt its modular indoor farming platform into a resource-efficient configuration tailored for smallholder farmers, including scalable systems capable of operating on solar power. A research and development farm based on Square Roots' technology will be deployed at the Innovation Oasis site to serve as a platform for the full ecosystem of programs under the collaboration, as well as additional Silal-led research initiatives.

Dhafer Rashed Al Qasimi, Silal Group CEO, said, "By integrating advanced research, AI-driven tools and farmer development, we are accelerating sustainable food production and strengthening the resilience of our agricultural sector for future generations."

Kimbal Musk, Executive Chairman of Square Roots, said, "Combining Square Roots' controlled-climate farming and crop science expertise with Abu Dhabi's forward-thinking agricultural vision will fast-track solutions in food security and resource efficiency, delivering scalable models that support farmers in the UAE and across desert regions globally."

Through this agreement, iO is further strengthening Abu Dhabi's position as a global hub for advanced agricultural development. Innovation Oasis remains focused on converting scientific breakthroughs into real-world outcomes, enhancing farmer competitiveness, unlocking new economic opportunities in the agri-food sector and reinforcing the UAE's long-term sustainability and food security ambitions.

‘Most AI agents in a single logistics facility’: Guinness World Records for AD Ports Group

The most AI agents deployed in a logistics facility is 205, and was achieved by AD Ports Group, a global enabler of integrated trade, transport and logistics solutions, according to the Guinness World Records™.

UAE-based AD Ports Group deployed AI agents to streamline real-time decision-making, automation, and resource optimisation within logistics facilities, paving the way for a future where fully autonomous, self-orchestrating supply chains operate with greater speed, accuracy, and resilience.

Mohamed Hassan Alsuwaidi, Chairman of AD Ports Group, and Captain Mohamed Juma Al Shamisi, Managing Director and Group CEO, were presented with the official certificate. By deploying autonomous agents across functions ranging from cargo handling to warehouse automation, AD Ports Group has delivered measurable efficiency gains, cost reductions, and operational resilience at scale.

Key innovations include the Vessel Speed Optimiser, which cut fuel consumption by approximately 3%; the Container Balancer, which boosted utilisation by 90%; and the Intelligent Workforce Scheduler, which reduced HR processing times by more than 90%.

The deployment of AI agents marks a fundamental shift in how logistics systems operate, enabling real-time decision-making, predictive planning, and autonomous coordination at a scale previously unattainable. According to a survey published by PwC across industries, approximately 79% of companies using AI agents report adopting them at scale, and 66% have recorded measurable productivity gains, underscoring the transformative impact of agentic AI on operational performance.

Mohamed Hassan Al Suwaidi, Chairman of AD Ports Group, said, “Innovation is becoming one of the most powerful drivers of national strength and economic resilience. At AD Ports Group, we are embedding advanced AI agents across our operations to redefine how trade, logistics and infrastructure are orchestrated at scale.”

Mohamed Jamal-Eddine, Group Chief Information Officer at AD Ports Group, said, “Our AI agents, which we also identify as our digital co-workers, are designed around real operational needs and measurable outcomes, the equivalent of a full-time employee. They are integrated directly into decision-making workflows to solve challenges at scale.”

The Group’s recently released blueprint, “Building Human-AI Teams: AD Ports Group's Blueprint for Tomorrow's Workforce” details how AI-powered agents are reshaping operations, elevating human potential, and enabling scalable growth internationally.

New environmental data platform to strengthen evidence-based policy, planning

The Environment Agency – Abu Dhabi (EAD) has launched its Environmental Data Platform (EDP). This innovative system – the first to integrate such a wide range of environmental data in the region – marks a transformative step forward in environmental intelligence and sustainable development.

At its core, the EDP serves as a centralised repository that unifies nearly three decades of meticulously collected environmental datasets. Covering a broad spectrum of parameters including air and marine water quality, soil composition, biodiversity and waste management records, the platform provides a single source of truth for environmental data in Abu Dhabi.

This wealth of historical information, when combined with state-of-the-art AI and machine-learning algorithms, enables predictive modelling, early warning systems and advanced scenario analysis that support evidence-based policy, scientific research and practical applications across multiple sectors.

Dr. Shaikha Salem Al Dhaheri, Secretary-General of EAD, said, "The Environmental Data Platform is a cornerstone in our journey towards smarter, more resilient environmental management. By consolidating decades of data into one unified, intelligent system, we are transforming how knowledge is generated, shared and applied across sectors.

"This platform marks a shift from reactive responses to a proactive and predictive approach, enabling us to anticipate challenges, allocate resources with greater efficiency and safeguard Abu Dhabi's environmental wealth with unprecedented precision. It also strengthens transparency, ensuring that policymakers, researchers, the private sector and the community have access to reliable and verified data that supports evidence-based decisions."

The platform also features an interactive gateway, offering an intuitive interface that makes environmental data and insights accessible to consultants, academia, policymakers and the general public. Through user-friendly dashboards and visualisations, stakeholders can explore complex information in clear and actionable ways.

Furthermore, the platform is fully interoperable with key Abu Dhabi entities, including the Department of Municipalities and Transport (DMT), Abu Dhabi Municipality, and the Statistics Centre – Abu Dhabi (SCAD). This seamless integration promotes a holistic approach to environmental management, enabling data-driven policies that reflect the interconnected nature of ecosystems, infrastructure and development.

ZURICH: A Smart City role model

The strategy Smart City Zurich aligns with the city's long-term goals and establishes a framework for making the most of the opportunities offered by digital transformation

The city of Zurich, Switzerland, was ranked first among the world's smartest cities for five years in a row in 2025. The ranking, by the International Institute for Management Development's (IMD) 'Smart City' index examines the extent to which technology helps cities provide residents with a higher quality of life. Zurich was recognised for its outstanding digital infrastructure, strong sustainability initiatives and citizen-centred services.

For the City of Zurich, "smart" means connecting people, organizations and infrastructures in such a way that social, ecological and economic added value is created. Here, future urban development is seen as a long-term undertaking, aligned with the goal of net zero by 2040, and aims to create a livable, efficient, and inclusive urban environment.

Combining cutting-edge technology, sustainable practices, and citizen-centric approaches, Zurich's initiatives

Zurich's initiatives in mobility, energy, digital infrastructure, and sustainability make it a global leader in smart city development

in mobility, energy, digital infrastructure, housing and sustainability enshrined within the Zurich 2040 Strategies make it a global leader in smart city development.

AR for Urban Planning

Zurich is using augmented reality (AR) to build the city. The urban planning department uses AR glasses to visualise future buildings and underground utilities. Tourists and citizens can also use these glasses to get glimpses of the future. Zurich runs guided tours that take them through the city with these glasses. On these tours, they can view how planned buildings will look long before construction begins.

Besides AR, Zurich also uses digital twins to plan construction. Digital twins provide a precise view of Zurich and include details such as the terrain, height of buildings, and the presence of bridges and walls. This allows contractors to visualise and digitally test new building projects before execution.

Environmental factors like noise, air pollution, and flood vulnerability affect the quality of life and contractors take these factors into account before planning new residential buildings or school buildings.

Digital Infrastructure

Zurich leverages smart data platforms to optimize urban management. By collecting and analyzing real-time data, the city improves traffic flow, waste management, and public services.

The city's commitment to open data fosters collaboration between the government, businesses, and startups. Initiatives like Open Zurich provide access to datasets that support innovation in areas such as urban planning, mobility, and sustainability.

Smart Mobility

Zurich boasts one of the most efficient public transport systems globally. Its smart mobility initiatives integrate trams, buses, trains, and

e-scooters into a cohesive network accessible via a single digital platform. The Zürcher Verkehrsverbund (ZVV) app offers real-time updates, ticket purchasing, and journey planning, making public transit seamless and efficient.

Zurich's city administration is also using a 3D road map to create more efficient public roads and citizen services. The map gives the city administration precise knowledge about the city's road conditions. It allows city staff to conduct road inspections online, saving time and improving efficiency.

Emphasis on Micromobility

The city encourages micromobility solutions like bike-sharing programs and e-scooters. Dedicated cycling lanes and pedestrian-friendly infrastructure further reduce traffic congestion and promote eco-friendly transportation.

Energy Efficiency and Sustainability

Zurich's energy policies prioritize renewable sources, with hydropower providing a significant portion of the city's electricity. Solar panels adorn rooftops across the city, while energy-efficient building designs reduce overall consumption. The city's district energy systems utilize waste heat from industrial processes to provide heating and cooling solutions. This innovative approach reduces greenhouse gas emissions and enhances energy efficiency.

AI Bolsters Citizen Safety

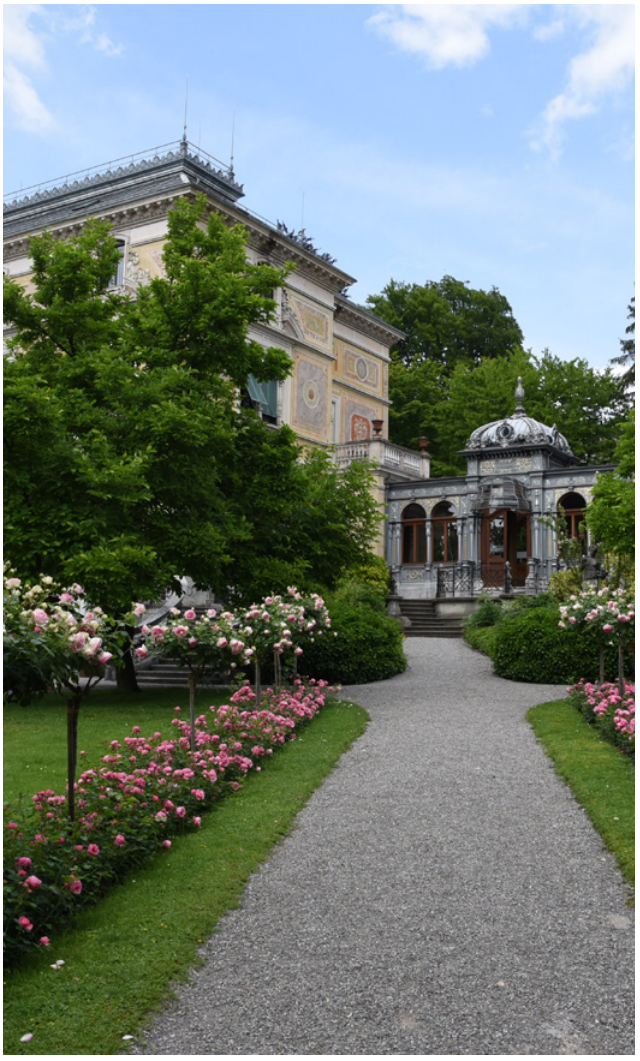
Security is getting smarter in Zurich as the police force uses AI to predict areas with increased burglary rates. The algorithm works by identifying patterns in anonymised police reports on burglaries. Once a pattern is identified, the AI

Zurich uses a digital twin built from 3D spatial data to make urban planning more transparent and data-driven

highlights those areas at a higher risk for burglary for a 72-hour-period, thus informing the police to increase patrols in the area.

Citizen-Centric Smart City Solutions

Zurich actively involves its residents in shaping the city's future. Digital platforms enable citizens to provide input on urban projects, ensuring that developments align with community needs. Another online platform allows citizens to easily access the city's services. For example, residents can make appointments for weddings, track their taxes, or register their children for music lessons at school all through one platform. Residents can also report any damaged public infrastructure



online via a smartphone app or web application.

From energy-efficient housing to digital healthcare solutions, Zurich prioritizes improving the quality of life for its residents. The city's initiatives cater to diverse demographics, ensuring inclusivity and accessibility.

World Future Energy Summit 2026 spotlights potential of AI in the Middle East's clean energy sector

From cutting energy waste to improving health outcomes and driving farming efficiencies, AI is a powerful means to accelerate sustainability solutions

With artificial intelligence (AI) emerging as a transformative force in the clean energy sector, the World Future Energy Summit 2026 spotlighted its vast potential to reshape energy production, transmission, and efficient, data-driven distribution.

The theme of AI ran across all seven conference tracks at the 2026 edition of the event, which concluded on January 15 at the Abu Dhabi National Exhibition Centre (ADNEC). The 2026 edition built on the AI momentum, raising the bar with the launch of the FUSE AI Zone, a dedicated platform where more than 40 companies showcased cutting-edge AI solutions to drive clean energy, smart infrastructure, and climate resilience.

The event also incorporated the inaugural Artificial Intelligence Conference, a forum that explored how AI can be responsibly harnessed to accelerate progress across the energy, infrastructure, and smart cities sectors.

Gathering thought leaders, innovators, and policy influencers, the Summit spotlighted AI's predictive power and its ability to optimise the management of clean energy flows, providing a vital technical boost to help low-carbon systems scale effectively.

Using AI to Accelerate Technical Breakthroughs

In the Middle East and North Africa (MENA), AI adoption is accelerating across multiple areas, from grid and demand-response management to sector coupling and system maintenance.

Advances in forecasting and energy storage are also enhancing performance, enabling companies to deliver renewable energy with greater efficiency. Yet important questions remain about how best to unlock AI's full potential to power the sustainable energy systems of the future.

For example, can AI make up for shortcomings in energy policy that hold back the transition to carbon-free energy? Can it accelerate innovation to enable researchers and entrepreneurs to more rapidly test and prove technologies that make a direct impact on decarbonisation? These pressing issues, plus the potential of AI to advance the exploration of mineralisation for carbon capture, were addressed by leading experts at the 2026 World Future Energy Summit, now globally recognised as the world's premier business event focused on future energy and sustainability.

The UAE's clean energy goals, driven by its Net Zero by 2050 Strategic Initiative, involve increasing clean energy to 50% of the total energy mix by 2050, reducing carbon emissions by 70%, and tripling renewable energy capacity by 2030. AI will be a key enabler for achieving these clean energy targets across the region.

The World Future Energy Summit and Abu Dhabi Sustainability Week's Advisory Committee's 2025 AI and Technology Insights Report supports this, stating that AI can significantly enhance the efficiency and reliability of clean energy and infrastructure networks both regionally and globally.

> *AI will be a key enabler for countries to achieve national clean energy goals*

According to the report, smart grid algorithms can accurately predict and then balance electricity supply and demand in real time, integrate renewables, and reduce the need for constructing new power plants. Investment in digital infrastructure and skills is key, however, so that utilities can harness data for grid optimisation and predictive maintenance.

Driving Energy Efficiency in Homes and Businesses

The 2026 edition also highlighted the growing role of AI in enhancing energy efficiency within buildings. According to the World Economic

Forum, AI technologies are already helping companies reduce energy consumption by up to 60 per cent in some cases.

While the industry has only just begun to tap into AI's full potential in this field, the opportunities for progress are vast.

At the event's panel discussions and keynote sessions, a powerhouse of industry experts explored the key challenges and opportunities surrounding energy efficiency in homes and businesses across the MENA region and beyond.

Speakers discussed how new AI- and automation-powered design tools can help create spaces that are energy-, water- and people-efficient, all while staying within budget. They also examined how smart software can rapidly test design options to identify solutions that cut costs and reduce environmental impact.

Additional sessions addressed how innovation, collaboration, and resilient supply chains can help build sustainable urban futures.

Understanding AI's Energy Consumption

AI's transformative potential is undeniable, yet credible estimates project AI-related electricity consumption could grow by as much as 50 per cent each year from 2023 to 2030.

The electricity demand of data centres is also projected to grow, from one per cent of global energy demand in 2022 to more than three per cent by 2030.

AI technologies help companies reduce energy consumption by as much as 60%

In January 2025, Masdar and Emirates Water and Electricity Company announced the launch of the world's first large-scale round-the-clock giga-scale project, combining solar power and battery storage in Abu Dhabi.

Delivering up to one gigawatt of baseload power every day generated from renewable energy, it will be the largest combined solar and battery energy storage system in the world.

According to the 2025 AI and Technology Insights Report, such projects could redefine how critical AI systems are powered, eliminating the need for fossil fuel backup. By connecting to clean energy sources, AI data centres could operate with near-zero carbon emissions, marking a major step towards a more sustainable digital future.

The Summit explored ways to tackle AI's energy footprint with a dedicated panel session on actionable strategies to realign AI growth with climate goals, balance energy consumption, and drive sustainable innovation without sacrificing usability.

"AI's role in climate and environmental systems is expanding rapidly and understanding how to guide that growth is becoming just as important as advancing the technology itself," said Mehdi Ajana, Head of Strategy at Nabat.

"The World Future Energy Summit highlighted practical, data-driven approaches, from improving habitat classification and health assessment model accuracy, to monitoring carbon and biodiversity metrics that help align AI innovation with measurable climate outcomes."

Paving the Way to a Sustainable Future

The 2026 World Future Energy Summit also explored the role of AI in healthcare, food security, and weather modelling, with a keynote presentation on Earth Two Climate, G42, and NVIDIA's new AI-powered weather forecasting solution that accurately gauges weather conditions down to a single square metre. This is invaluable to farmers and smart agriculture planners, who can make more informed decisions on crop choices, yield expectations, maintenance procedures, and more.

How can AI empower "HUMANWARE" to inculcate sustainable living

Dr. Eisa M. Abdelllatif
Chief Technical Advisor
Zayed International Foundation
for the Environment

Sustainable living, characterized by practices that minimize environmental impact and promote social equity, is no longer an aspiration but an imperative for our planet's future. Achieving this paradigm shift fundamentally relies on "humanware capacity" – the collective knowledge, skills, values, and behaviors that enable individuals and communities to embrace sustainability. Bridging the gap between awareness and action is a monumental challenge, and Artificial Intelligence (AI) emerges as a powerful catalyst to enhance this humanware capacity and inculcate sustainable living at scale.

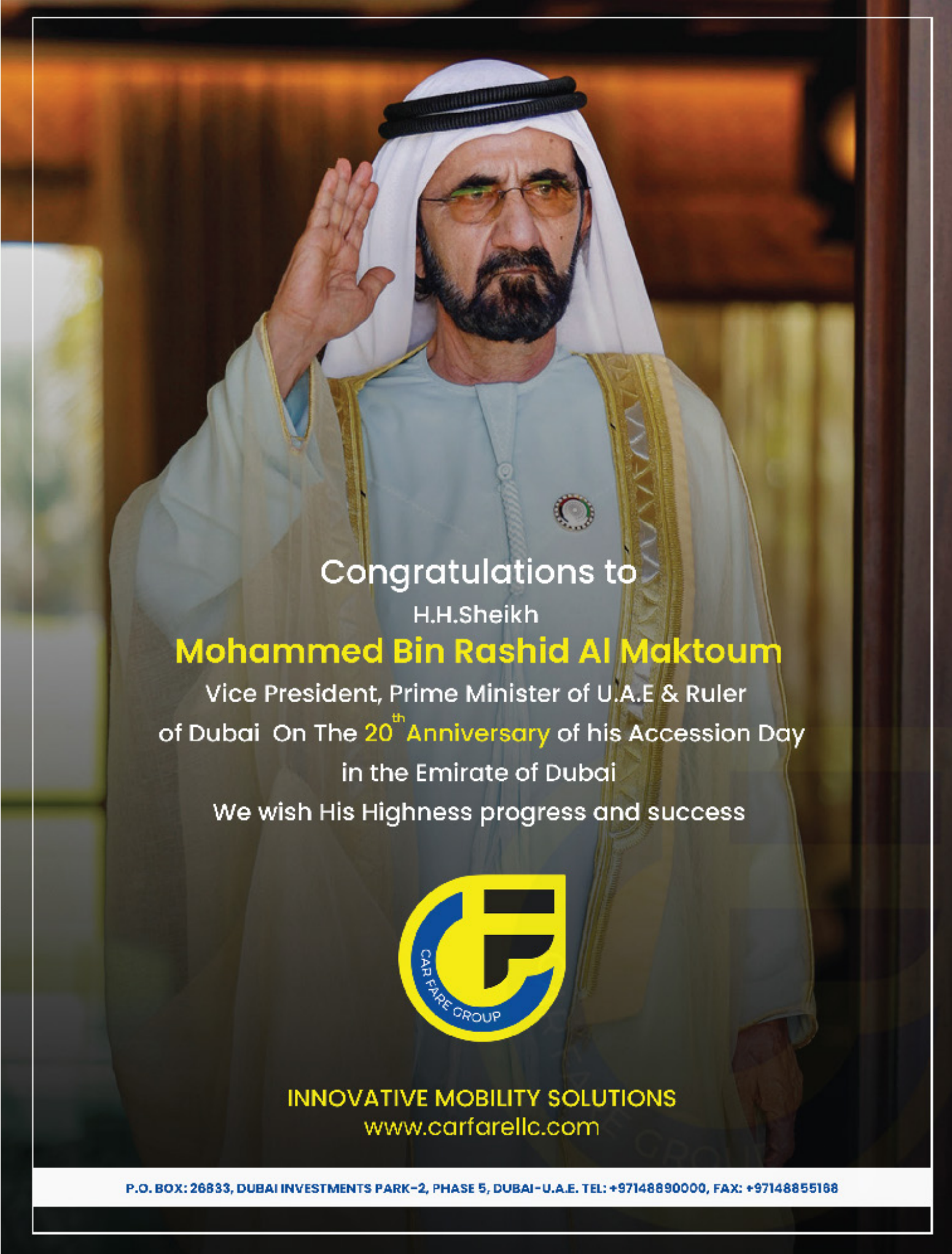
One of AI's most significant contributions lies in personalizing free knowledge about sustainability. Traditional education often struggles to keep pace with evolving environmental science, while AI-powered platforms can deliver tailored information adapted to a user's specific location, lifestyle, and learning style. Through interactive applications, augmented reality simulations, and engaging data visualizations, AI can demystify complex environmental data, making it accessible, relatable, and practical.

Beyond mere awareness, AI also excels in nudging behaviors towards greener choices. Smart home systems, for instance, leverage AI to optimize energy and water consumption, providing real-time feedback to make efficiency tangible. Mobile applications offer personalized recommendations for sustainable consumption, highlighting local, eco-friendly products, or suggesting optimal public transport routes. Gamification techniques, integrated into AI-driven platforms, can transform tedious sustainable habits into rewarding and engaging activities, fostering long-term behavioral change by turning environmental responsibility into an interactive experience. AI effectively functions as a personalized coach for green living, continuously learning and adapting to individual progress.

Furthermore, inculcating sustainable living demands a profound shift in values and ethical considerations. AI can play a crucial role in this by simulating the long-term environmental and social impacts of current actions. By visualizing future scenarios – such as the consequences of unchecked resource depletion versus the benefits of a regenerative economy – AI can foster empathy, a sense of urgency, and a deeper appreciation for planetary stewardship.

Decision support systems powered by AI can aid policymakers and communities in understanding complex trade-offs, enabling them to choose sustainable pathways that balance economic development with long-term ecological preservation.

While AI's potential is immense, its responsible development and deployment are crucial. Ensuring accessibility, preventing bias in data, and maintaining data privacy are paramount. When designed ethically and integrated thoughtfully, AI can significantly amplify our collective humanware capacity, transforming abstract concepts of sustainability into tangible, deeply ingrained practices, paving the way for a truly harmonious relationship between Man and the planet.


Congratulations to
H.H.Sheikh
Mohammed Bin Rashid Al Maktoum
Vice President, Prime Minister of U.A.E & Ruler
of Dubai On The 20th Anniversary of his Accession Day
in the Emirate of Dubai
We wish His Highness progress and success
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