PROTOTYPES
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# Short Papers Platform Author Biographies

**2026 EDITION**

The Short Papers Platform is a unique forum for professors to disseminate research and insights in close connection with industry needs and opportunities, fostering collaboration and knowledge exchange. It connects academics with an international and interdisciplinary group of peers, alongside leaders from the private and public sector, to advance research and innovation. Following an open call earlier this year, an international jury of expert academics selected the highest-quality papers from over 700 global applications.

The 2026 Short Papers Platform is held in strategic partnership with ICD (Investment Corporation of Dubai), reinforcing the programme's commitment to collaboration between academia and industry, focusing on themes that reflect international research priorities and that are relevant to the city and to the fund.

We are delighted to announce the authors selected for the 2026 edition. Bringing together distinguished academics and researchers from universities around the world, this year's cohort represents a diverse range of disciplines, expertise and perspectives, united by a commitment to advancing research with real-world relevance and impact.

Meet the participating authors and discover their academic backgrounds, research expertise and contributions to this year's programme.

# Autonomous Systems and Advanced Manufacturing



# Autonomous Systems and Advanced Manufacturing



## Doctor Brad Curabba

**American University of Sharjah**
**United Arab Emirates**

Paper title:

**CyberScholar: AI Trust Infrastructure for Education**

Dr Brad Curabba is a Senior Instructor in Writing Studies in the Department of English, College of Arts and Sciences, at the American University of Sharjah, UAE. He holds an EdD in Learning Design and Leadership from the University of Illinois Urbana-Champaign (2025), an MA in Teaching English as a Second Language from the SIT Graduate Institute (2005) and a BA in Political Science from the State University of New York at Albany (1999).

He has taught English as a foreign language, TESOL training and academic writing courses for over 15 years. Before joining the American University of Sharjah in 2015, he was an EAP Instructor at UAE University in Al Ain (2013-2015), a Program Specialist at SUNY Westchester Community College in New York (2009-2013) and a Senior Lecturer at Kanda University of International Studies in Chiba, Japan (2006-2009). He has been a member of TESOL since March 2006 and of the National Council of Teachers of English and the International Society for the Scholarship of Teaching and Learning since March 2017, and received a Faculty Research Grant in 2020-21.

His work has been published in journals including ELT Journal (2010) and the Asean Journal of Psychiatry (2024), with research on students transcribing tasks, process-based feedback for second-language composition students in the UAE (with Sana Sayed, 2020), using Google Drive for collaborative writing and classroom projects (2016) and student perceptions of liberal arts and general education courses.



## Doctor Julio Fajardo

**Galileo University**
**Guatemala**

Paper title:

**Adaptive Robotic Framework for Teleoperated Inspection of Hydroelectric Penstocks**

Dr Julio Fajardo is the Director of the Laboratory of Dynamic Systems and Control and a Senior Researcher at BiomedLab at Galileo University in Guatemala City. A professor dedicated to advancing the fields of robotics and biomechanical engineering, he holds a Ph.D. in Electrical Engineering, with a focus on robotics, from the State University of Campinas (UNICAMP) in São Paulo, Brazil.

Alongside leading research initiatives, Dr Fajardo promotes innovation and interdisciplinary collaboration across technological fields. His teaching includes Embedded Systems, Bioinstrumentation, Statistical Learning, Control Systems and Robotics. Through his academic work, he combines technical expertise with practical applications, preparing students to develop innovative engineering solutions.

Dr Fajardo's core research interests include dynamic system identification, robust control, robotics, embedded systems, digital signal processing, computer vision and deep learning. He was the principal hardware and software designer of the Galileo Hand embedded system, an example of his work translating bioengineering research into assistive technology. His experience in project management and technological development supports the progression of research concepts into practical devices. In recognition of his contributions to engineering and society, Dr Fajardo was named among the MIT Innovators Under 35 in 2018 by the Spanish-language edition of MIT Technology Review. His work brings together research, teaching and the design of new technology.

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## Mr Rishivarathan Ilangovan

**Singapore University of Technology and Design**
**Singapore**

Paper title:

**Dragonfly: An Autonomous Robotic System for Chemical-Free Aedes Mosquito Control in Urban Environments**

Mr Rishivarathan Ilangovan is a robotics researcher and Lead Mechanical Engineer at the Singapore University of Technology and Design (SUTD), Singapore. He holds an MSc in Smart Manufacturing from Nanyang Technological University, Singapore, and a BEng in Mechanical Engineering from Anna University, Chennai.

His work focuses on robotics, mechanical design and advanced manufacturing, with an emphasis on developing and deploying robotic systems for real-world applications. His experience spans mechanical design, manufacturing, robotics, experimental research and engineering system development. During his postgraduate studies, he worked on Laser-Induced Breakdown Spectroscopy (LIBS), focusing on data analysis, processing methods and the development of data libraries for elemental analysis of liquid samples.

At SUTD, he contributes to robotics research as a lead mechanical engineer, through mechanical system design, fabrication, integration, experimentation and robotic platform development. His multidisciplinary expertise bridges mechanical engineering, robotics and manufacturing technologies, from system-level design to physical implementation and testing. He is particularly interested in developing practical robotic solutions that combine robust mechanical design with autonomous and intelligent capabilities.

# Autonomous Systems and Advanced Manufacturing



## Professor Oliver Niebuhr

**University of Southern Denmark**
**Denmark**

Paper title:

**Voice as Social Capital: StagePod and the Prototyping of Equitable Communication Training**

Professor Oliver Niebuhr is Associate Professor of Communication and Innovation at the University of Southern Denmark (SDU) and Head of the Acoustics Laboratory at the Center for Industrial Electronics. He received his PhD (summa cum laude) in Phonetics and Digital Speech Processing and has held academic appointments at universities in Aix-en-Provence (France), York (UK) and Kiel (Germany). At the Christian-Albrechts-University of Kiel, he also directed the Kiel Research Center for Voice and Emotion.

He is the developer of the Acoustic Voice Profiling® technology and Founder and CEO of the speech-technology company AllGoodSpeakers ApS. His research output comprises over 200 scientific publications and spans phonetics, speech technology, communication and charisma science.

Professor Niebuhr is Associate Editor of Phonetica and the Journal of the International Phonetic Association. He currently holds the position of Executive Secretary of the International Phonetic Association and is the Scientific Editor of the second edition of the international bestseller The Charisma Myth.

His awards include the PerLe Award for innovative teaching (Kiel University), SDU's LTP Award for pedagogical excellence, the BHJ Innovation Award, the Best Paper Award at the International Conference on Higher Education Advances and the SDU-TEK Research Dissemination Prize.



## Mr Patrick Tan

**Kim Yew Ingetrated Pte. Ltd.**
**Singapore**

Paper title:

**Dragonfly: An Autonomous Robotic System for Chemical-Free Aedes Mosquito Control in Urban Environments**

Mr Patrick Tan is Managing Director of Kim Yew Integrated, an integrated facilities management company in Singapore. He holds a Bachelor's degree in Business Administration and Management from the University of Queensland and a Diploma in Engineering from Ngee Ann Polytechnic, and has completed programmes in facilities planning and management at the BCA Academy, advanced management at Singapore Management University and executive education at NUS Business School.

Since 2021, he has led the company with a new management team and board, focusing on data-driven solutions, technology integration and sustainable practices. Founded in 1985 as a term contractor, Kim Yew Integrated now has over 700 employees and has completed more than 200 projects across Asia, and it has more than doubled its business since 2021. Its planned investments include robotics for cleaning and pest control, advanced data analytics and energy efficiency solutions.

Before becoming Managing Director, he served as a Director at Kim Yew from 2008 and as Director of Strategy and Business Development at Sodexo Kim Yew from 2017. Company recognitions include Gold Plus certifications from the Singapore International Facility Management Association for facilities management and sustainability, its Smart Technology award in 2021, 2022 and 2023, and the World Workplace Asia-Pacific Sustainability Merit in 2024. It marked its 40th anniversary in 2025 with a $68,000 donation to the Business Times Budding Artists Fund.

# Autonomous Systems and Advanced Manufacturing



## Doctor Raffi Tchakerian

**Dubai Institute of Design and Innovation**
**United Arab Emirates**

Paper title:

**An Integrated Material-Process Workflow for Error Mapping and Archival in Robotic Additive Manufacturing of Experimental Materials**

Dr Raffi Tchakerian is a designer, researcher and educator working across aerospace, aviation, robotics, product, humanitarian and interaction design, transforming ideas into tangible solutions for how people interact with their tools, technologies and environments. He graduated in Industrial Design from Iuav University of Venice (2008), completing a Master's in Product Design (2010) and a PhD in Design Sciences (2014), both with honours and focused on aerospace design.

Until 2015, he collaborated with Architecture and Vision and space architects Arturo Vittori and Andreas Vogler on projects spanning desert to space contexts, and he has taught in Italy, San Marino, the USA, Ethiopia, Kuwait and Lebanon. A founding faculty member of the Dubai Institute of Design and Innovation since 2018, he co-created the Foundation and Product Design programmes in collaboration with MIT and Parsons and equipped the Fab Lab, including its KUKA KR-150 robotic arm.

He currently teaches D-Lab: Advanced Robotic Manufacturing and leads applied research on robotic additive manufacturing for in-situ resource utilisation. He is co-founder, with Joanne Hayek, of Ibda.co, an R&D-driven design and engineering studio helping organisations turn early ideas into validated prototypes and proof-of-concepts, bridging research, design and engineering across software, hardware and hybrid systems.



## Doctor Anastasia Olga (Olnancy) Tzirides

**University of Illinois Urbana-Champaign**
**United States of America**

Paper title:

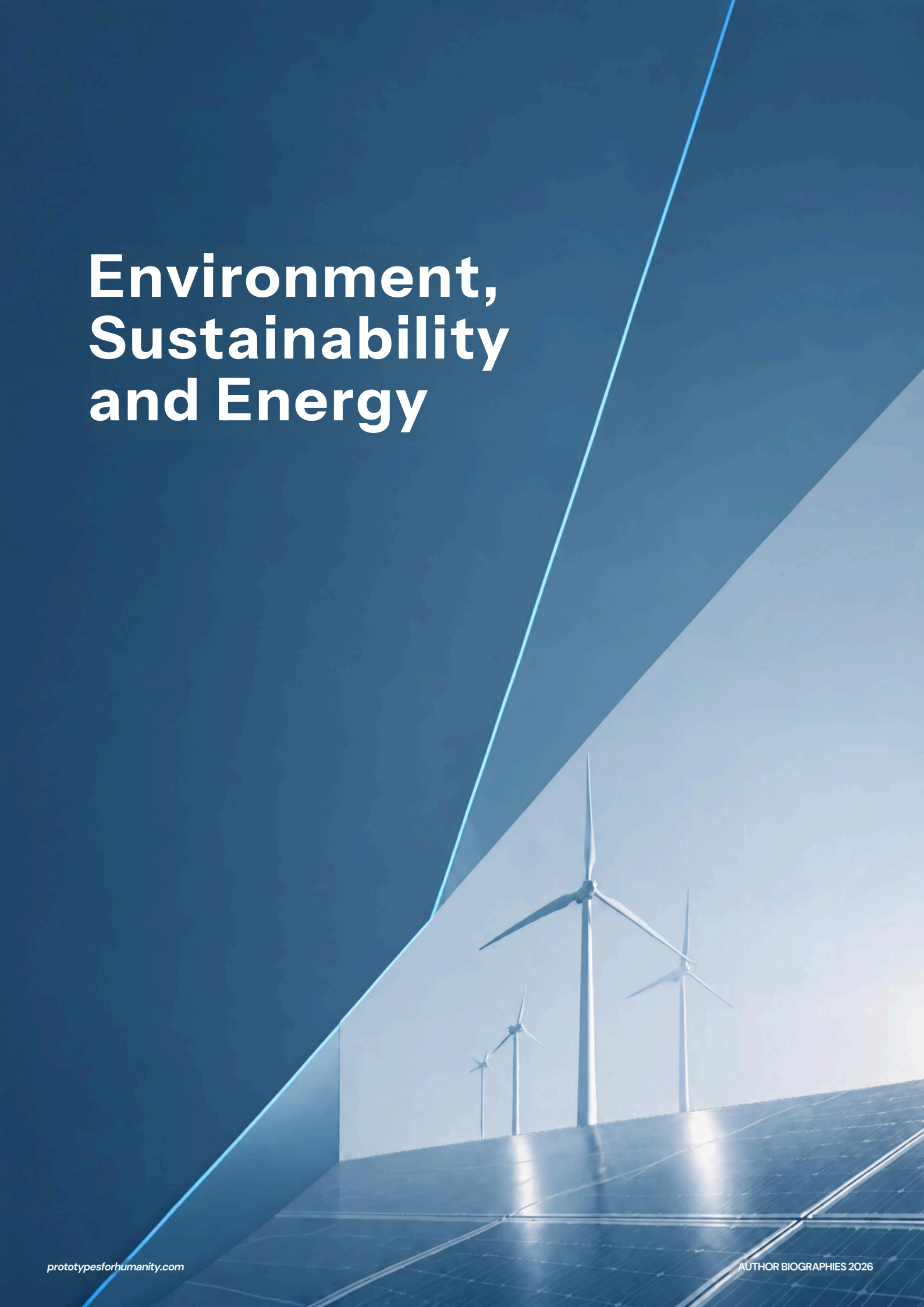
**CyberScholar: AI Trust Infrastructure for Education**

Dr Anastasia Olga (Olnancy) Tzirides is a Research Scientist at the Information Trust Institute, University of Illinois Urbana-Champaign, where her research focuses on generative AI, human–AI collaboration, AI literacy and the design of human-centred digital learning environments. She holds a PhD in Learning Design and Leadership from the University of Illinois Urbana-Champaign, and graduate and undergraduate degrees in multilingual and elementary education.

Her work examines how artificial intelligence can support learning, feedback and knowledge creation while maintaining human agency, critical engagement and transparency. She has contributed to the research and development of AI-supported learning environments, including CyberScholar, and to federally funded research on generative AI in education and digital learning. Her background combines learning sciences, educational technology, learning design and user experience research, including previous work as a UX Researcher at Google.

Dr Tzirides's work has been published in journals including Pedagogy, Culture & Society, Technology, Pedagogy and Education, International Journal on E-Learning and Computers & Education Open, and in conference proceedings and edited volumes. She is co-editor of Trust and Inclusion in AI-Mediated Education: Where Human Learning Meets Learning Machines (Springer, 2024). She has taught at the University of Illinois Urbana-Champaign and the University of Illinois Chicago, and has presented her research internationally.

# Environment, Sustainability and Energy



# Environment, Sustainability and Energy



## Professor Shabib Alrashdi

**National University of Science and Technology**
**Oman**

Paper title:

**AI-Driven Circular Process Safety Transformation: Converting Industrial Wastewater into Ultra-Pure Green Hydrogen with Integrated Carbon Capture**

Professor Shabib Sulaiman Al-Rashdi is a Senior Lecturer and Director of the Waste-to-Energy Research Laboratory at the College of Engineering, National University of Science and Technology (NUST), Sultanate of Oman, where he has served since 2013. He holds a PhD in Chemical Engineering from University of Kuala Lumpur, Malaysia.

His expertise encompasses waste-to-energy and waste-to-value technologies, green hydrogen, advanced wastewater treatment, membrane processes, circular economy and environmental sustainability. He has led 34 nationally funded projects converting municipal, agricultural and industrial wastes into energy and value-added products, including biochar, green hydrogen electrolysis, membrane technologies, bio-based coatings and the valorisation of agricultural residues. He has authored 32 peer-reviewed journal publications and holds six patents.

Prior to his academic career, he gained more than nine years of industrial and environmental experience in chemical production, municipal environmental engineering and the methanol industry, which strengthened his ability to bridge industrial challenges with applied research and real-world outcomes. His current work translates laboratory innovations into scalable, practical solutions for wastewater reuse, resource recovery, green hydrogen and circular industrial systems across the region. He is also committed to mentoring emerging Omani researchers, strengthening national research capacity and supporting Oman Vision 2040.



## Professor Marzieh Azarderakhsh

**New York City College of Technology**
**United States of America**

Paper title:

**Satellite-Detected Lake Ice as a Climate Sentinel: A Validated Multi-Year Method for Data-Sparse Lake Regions**

Professor Marzieh Azarderakhsh is an Associate Professor of Civil Engineering at New York City College of Technology, City University of New York, where her research applies satellite remote sensing to hydrology and climate science. She holds a PhD from the CUNY Graduate Center and is a licensed Professional Engineer in the State of Texas.

Her work focuses on land surface characterisation and the monitoring of wetland dynamics, snow cover, precipitation, freeze–thaw cycles, surface water temperature and lake ice, using microwave and optical satellite observations at scales from individual water bodies to entire regions. This research has been supported by the National Aeronautics and Space Administration, the US Geological Survey, the National Science Foundation, the New York State Department of Environmental Conservation and the City University of New York.

Professor Azarderakhsh's work is published in journals including Reviews of Geophysics, Geophysical Research Letters, Environmental Research Letters, IEEE Geoscience and Remote Sensing Letters, Remote Sensing of Environment and Environmental Advances. She is an active member of the American Geophysical Union and the Global Lake Ecological Observatory Network, and collaborates with partners across the Adirondack Park on lake monitoring and climate adaptation. Her current research develops scalable satellite-based methods for multiyear lake ice phenology, supporting water resource management and climate adaptation planning in data-sparse lake regions.

# Environment, Sustainability and Energy



## Doctor Radon Dhelika

**University of Indonesia**
**Indonesia**

Paper title:

**Development of a Dual-Camera Machine Vision System for Real-Time Capacitor Detection on Waste PCBs**

Dr Radon Dhelika is an Associate Professor at the Faculty of Engineering, University of Indonesia (FTUI). He earned his doctoral degree from Tokyo Institute of Technology, Japan, in 2015. His areas of expertise include electromechanical systems, mechatronics and product design, with research interests spanning sustainable engineering, automation and intelligent systems.

His current research focuses on practical engineering solutions that support sustainability, and includes automated disassembly of waste printed circuit boards (PCBs), automation for electric vehicle (EV) battery recycling and vibration-based structural health monitoring of engineering structures. Passionate about engineering education, he has served as Course Coordinator for Mechanical Engineering Capstone Design since 2019 and for Engineering Cornerstone Design, focusing on design thinking, since 2024. He is Head of the Unit for Planning and Engineering Education Modernisation at FTUI, contributing to curriculum development, innovative teaching and learning, and the responsible integration of emerging technologies in engineering education.

Beyond his academic work, Dr Dhelika is a co-founder of Seramu Coffee, a startup providing fast and convenient self-service coffee for university students. He is also active in public science and engineering communication through his YouTube channel, which has attracted more than 4,000 subscribers and over 16,000 watch hours, helping to make engineering more accessible to a wider audience.



## Professor Fernando Espinoza

**Duoc UC**
**Chile**

Paper title:

**Ecobricks: A Sustainable Construction Breakthrough – Turning Plastic Waste into High-Strength Building Solutions**

Professor Fernando Espinoza Díaz is a leading researcher in construction engineering, sustainability and community work, with over 20 years of academic and industry experience. He leads collaborative, cross-disciplinary initiatives ranging from heritage conservation to testing new materials for sustainable construction at his institutions recently created applied research department.

His research explores how to transform waste into new building materials, and involving communities in raising environmental awareness so that scientific results translate into practical benefits for society. He has supervised internships across different majors at the institution, guiding students in applied real-world projects, and regularly speaks in public and private schools to disseminate knowledge and raise environmental awareness.

Beyond academia, Professor Espinoza Díaz manages a worker cooperative focused on waste management. His current work focuses on transforming waste into new materials with a lower environmental impact. He has presented his research at various academic and industry events, highlighting the importance of taking action on climate, and his work has been recognised for its impact on environmental education and sustainable construction practices. He continuously bridges academia and industry, ensuring that research results reach practitioners and communities.

# Environment, Sustainability and Energy



## Doctor Abdelaziz Gouda

**University of Waterloo**
**Canada**

Paper title:

**Light, Not Flame: A Single-Step Photolysis Prototype Turning Waste Methane into Battery-Grade Carbon Nanotubes and Clean Hydrogen**

Dr Abdelaziz Gouda is the founder and CEO of CarbonLume Inc. and a research associate in the Department of Chemical Engineering at the University of Waterloo, working with Professor Michael Pope on a TICAN-funded academic–industry partnership developing light-grown, tunable carbon nanotubes for next-generation electrochemical devices. He completed his PhD in Materials Engineering at Polytechnique Montréal (2021) under Professor Clara Santato, with a thesis on biosourced quinone-based electrochemical energy storage, and holds an MSc in Physics from the American University in Cairo and a BSc in Physics from Ain Shams University, Cairo.

From 2021 to 2025, he was a Postdoctoral Research Fellow in the Department of Applied Chemistry and Chemical Engineering at the University of Toronto, working with Professor Geoffrey Ozin's Solar Fuels Group, where he originated the light-driven methane photolysis technology underlying CarbonLume, reported in Energy & Environmental Science (2026) and protected under US Patent 12,319,580 B2.

Dr Gouda has authored more than 25 peer-reviewed publications and holds four patents, including two provisional filings on modular photonic reactor design. His work has been recognised through the 2025 Startupfest Pitch Competition (Top University Startup award), Creative Destruction Lab–Climate, the MIT Blueprint and HAX deep-tech cohorts, and selection as one of 600 young scientists for the 71st Lindau Nobel Laureate Meeting in Chemistry (2022).



## Professor Alex Ossa

**EAFIT University**
**Colombia**

Paper title:

**Bioinspired Silicon Electrodes for Platinum-Free Green Hydrogen Production: Translating Mitochondrial Nanoarchitecture into Scalable Water Electrolysis**

Professor Alex Ossa works at the intersection of nature and engineering, with research spanning bioinspired materials and biomaterials, additive manufacturing, the mechanical behaviour of biological materials, nanomechanical characterisation via atomic force microscopy (AFM) and engineering failure analysis. He holds a PhD in Engineering from the University of Cambridge (Queens' College, 2004) and has completed postdoctoral research at the University of Nottingham. He is recognised by Colombia's Ministry of Science, Technology and Innovation (Minciencias) as a Senior Researcher.

Professor Ossa currently serves as Head of the Master's Graduate Programmes in Engineering and in Engineering Sciences at EAFIT University in Medellín, Colombia. In recent years, his work has extended into green hydrogen production through nanostructured electrodes bioinspired by mitochondrial geometries, a project currently advancing towards technology transfer from the university.

He has led more than twenty research projects funded by Minciencias, Ruta N, private industry and international funding bodies. His work has resulted in over sixty publications in high-impact peer-reviewed journals, including Acta Materialia, Acta Biomaterialia, Advanced Engineering Materials and the Journal of the Mechanical Behavior of Biomedical Materials, as well as one granted international patent (WO2019058203) and further intellectual property registrations with Colombia's Superintendency of Industry and Commerce.

# Environment, Sustainability and Energy



## Doctor Narayana Prasad

**Brigham and Women's Hospital**
**United States of America**

Paper title:

**Community-Led Environmental Health Surveillance Using Upcycled Materials and Mobile Technology in Climate-Vulnerable Bangladesh**

Dr Narayana G. Prasad is a physician, public health researcher and Technical Director of the Cardiovascular Medicine Core Imaging Lab at Brigham and Women's Hospital, a Harvard University-affiliated hospital. He holds a medical degree from Bangalore University and has advanced training in management, public health and educational leadership from Harvard University and the University of California, Berkeley. He is a Fellow of the American Society of Echocardiography and of the Royal Society for Public Health, and is certified by the National Board of Public Health.

His clinical research is at the forefront of cardiovascular imaging, with numerous publications in high-impact journals such as Nature Medicine, the Journal of the American College of Cardiology and Circulation. His work focuses on using echocardiography to understand cardiac mechanics and structure–function relationships in conditions such as heart failure with preserved ejection fraction and transthyretin amyloidosis cardiomyopathy.

Beyond his clinical work, Dr Prasad is the Founder and President of The Butterfly Project, a non-profit initiative addressing social determinants of health. His public health research spans diverse global topics, including the impact of environmental toxins, HPV immunisation programmes and mental health crises, often in collaboration with international academic institutions. His career is dedicated to improving health through data-driven research, innovation and global alliance-building.



## Mr Brathikan Vijayamohan Mankayarkarasi

**Kumaraguru College of Technology**
**India**

Paper title:

**Parametric CFD Investigation of a Differential Heave Wave Energy Converter for Distributed Coastal Energy Access**

Mr Brathikan Vijayamohan Mankayarkarasi is a Simulation Engineer and Principal Architect of Research and Development at Kumaraguru College of Technology (KCT), India. A Chevening Scholar, he completed an MSc at the University of Edinburgh in 2023.

His research spans computational fluid dynamics for ocean energy systems, vibration-based sustainable materials processing, human–wildlife conflict governance and grid-integrated renewable energy optimisation, with a focus on solutions for coastal communities and climate-vulnerable ecosystems. He has authored 13 peer-reviewed publications and filed more than six patent applications.

At KCT, he heads REACT, a framework for strengthening applied engineering practice, and the Centre for Problem-Solving and Research Collaboration (CPSRC), which spans four interdisciplinary verticals. He also leads a WWF-India-partnered research centre on human–animal conflict in the Nilgiris.

Mr Mankayarkarasi co-founded Kinowave, a wave energy start-up that was the UK national winner of the James Dyson Award 2025. He is a UN SDSN Local Pathways Fellow, a member of the first cohort of the YOUNGO Just Transition Academy, and a National Winner of the Smart India Hackathon 2022.

# Environment, Sustainability and Energy



## Doctor Ala'a Wahbeh

**National Agricultural Research Center (NARC)**
**Jordan**

Paper title:

**Activated Bubble Technology for Managing Soil Salinity in Intensive Irrigated Agriculture: From Pot to Farm-Scale Validation in the Jordan Valley**

Dr Ala'a Wahbeh is an environmental and climate researcher. She is head of the Directorate of Environmental Research and Climate Change at the National Agricultural Research Centre (NARC), where she leads research and policy work on environmental sustainability and climate resilience in Jordan. She holds a MSc (2009) and BSc (2002) in Water Resources and Environmental Management from Al-Balqa Applied University in Jordan.

Her research centres on innovative, chemical-free approaches to managing soil and water salinity, particularly in irrigated agriculture across arid and semi-arid regions. This informs her work with AKYAS Environmental Consultancy, where she has contributed to the development and field validation of Activated Bubble Technology (ABT), a nanobubble-based water-treatment approach evaluated in controlled pot experiments and commercial farm-scale trials in the Jordan Valley.

Her work bridges academic research and applied environmental practice, translating laboratory-scale findings into scalable solutions for water-scarce agricultural systems and connecting climate adaptation and resource management research with national environmental policy and planning.



## Doctor Santiago Zapata

**University of Manchester**
**United Kingdom**

Paper title:

**Transforming Industrial Emissions into Assets: A Modular Chemical Looping Unit for Inherent Carbon Capture**

Dr Santiago Zapata Boada is a Research Associate in the Department of Chemical Engineering at the University of Manchester, where he works on chemical looping technology, low-carbon steel production and industrial decarbonisation. He holds a PhD in Chemical Engineering from the University of Manchester (2023), on the techno-economic and environmental assessment of extraction processes, an MSc in Advanced Process Integration and Design from the same institution, and a BSc in Chemical Engineering from National Polytechnic School, Ecuador.

He contributes to the process modelling and techno-economic work packages of the EU Horizon projects C4U and COUPLED, and leads the commercialisation of ChemLoop, a chemical looping route to syngas production and industrial heat that is progressing towards spin-out with the University of Manchester Innovation Factory. He has authored eleven journal articles and conference papers on process simulation, life cycle assessment and techno-economic analysis, and reviews for several chemical engineering journals.

Before returning to academia, he worked in the Ecuadorian oil and gas sector with Baker Hughes, EP Petroecuador, Orion Energy and Schlumberger, and later as an energy efficiency consultant at Process Integration Limited in the UK. He is also founder and CEO of Pungo Tech, an Ecuadorian climate-tech company developing digital tools for industrial carbon management, and a guest lecturer on the MSc in Chemical Engineering at ESPOL, Ecuador.

# Infrastructures and Cities



# Infrastructures and Cities



## Professor Sofia Alisjahbana

**Bakrie University**
**Indonesia**

Paper title:

**BURST-PLATE (Blast-Resistant Structural Plate for Public Facilities)**

Professor Sofia W. Alisjahbana is Rector of Bakrie University and a Professor in its Faculty of Engineering and Computer Science, Jakarta, Indonesia. She holds a BEng in Civil Engineering from the Bandung Institute of Technology (1986), an MSc in Engineering Mechanics (1988) and a PhD in Engineering Mechanics and Astronautics (1992), both from the University of Wisconsin-Madison, USA.

Her expertise lies in the dynamics of structures, engineering mechanics and plate dynamics, with research on blast-loaded plates, pavements and, more recently, public housing management. She began as a teaching and research assistant at the University of Wisconsin-Madison and joined Universitas Tarumanagara in 1993, where she held leadership roles up to Vice Rector for Academic Affairs until 2009. She has been Rector of Bakrie University since 2010 and a Senior Assessor for the National Accreditation Board for Higher Education since 2001.

Her work has been published in journals and proceedings including Strength of Materials (2022), IOP Conference Series: Materials Science and Engineering (2019) and Journal of Facilities Management (2024). She has written seven books, including works on structural mechanics, plate dynamics and the effects of blast loads on floor and roof plates. She holds the IPU and ASEAN Eng. professional designations and is a member of the American Institute of Aeronautics and Astronautics, the Wisconsin Alumni Association and the Indonesian Structural Engineer Association.



## Mr Muhammad Nuzulul Furqan

**Bakrie University**
**Indonesia**

Paper title:

**BURST-PLATE (Blast-Resistant Structural Plate for Public Facilities)**

Mr Muhammad Nuzulul Furqan is a structural engineer and permanent lecturer at Bakrie University, Indonesia, specialising in structural engineering, finite element modelling, computational mechanics and advanced numerical analysis. He recently completed an MSc in Structural Engineering at MARA University of Technology (UiTM), Malaysia, focusing on the failure mechanisms and post-fracture behaviour of point-fixed laminated glass, particularly the effects of delamination. He earned a Bachelor's degree in Civil Engineering from Bakrie University, where they researched the numerical modelling of blast-loaded orthotropic plates.

His undergraduate research resulted in publications in international journals and developed a continuing interest in structural response under extreme loading and his current research focuses on blast-resistant structural systems, protective engineering, structural resilience, computational mechanics and innovative material applications.

Mr Furqan has been involved in several government-funded research projects in Indonesia, particularly in defence and security, blast-resistant buildings and infrastructure, and computational analysis of bridge structures. His recent work includes BURST-Plate, an innovative reinforced-concrete protective panel enhanced with carbon fibre-reinforced polymer (CFRP) for blast-resistant and resilient infrastructure. He aims to bridge advanced computational analysis with practical engineering solutions for infrastructure safety, protection and resilience.

# Infrastructures and Cities



## Mr Muhammad Nuzulul Furqan

**Bakrie University**
**Indonesia**

**Paper title:**
**BURST-PLATE (Blast-Resistant Structural Plate for Public Facilities)**

Mr Muhammad Nuzulul Furqan is a structural engineer and permanent lecturer at Bakrie University, Indonesia, specialising in structural engineering, finite element modelling, computational mechanics and advanced numerical analysis. He recently completed an MSc in Structural Engineering at MARA University of Technology (UiTM), Malaysia, focusing on the failure mechanisms and post-fracture behaviour of point-fixed laminated glass, particularly the effects of delamination. He earned a Bachelor's degree in Civil Engineering from Bakrie University, where they researched the numerical modelling of blast-loaded orthotropic plates.

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## Professor Ajay Gupta

**Desh Bhagat University**
**India**

**Paper title:**
**Hardened Rescue Occupancy Architecture (HROA): A Resilient Sub-GHz Dual-Layer Telemetry Infrastructure for Structural Collapse Search and Rescue**

Professor Ajay Gupta is Director of Research and Development at Desh Bhagat University, Punjab, India. He holds a PhD in Life Sciences from Jawaharlal Nehru University (JNU), New Delhi, and completed postdoctoral research in cancer at the James Graham Brown Cancer Center, USA. With over 25 years of academic leadership and environmental research, he specialises in environmental hazards, public health and sustainable biodiversity preservation.

His notable work includes pioneering studies on pesticide-induced carcinogenicity in Punjab and diesel exhaust dioxin toxicity, and serving as Principal Investigator for a World Bank-funded National Agriculture Technology Project (2000). He has published extensively and authored books on AI in healthcare, air and water pollution, and biodiversity, contributing to public understanding of environmental and health challenges.

His contributions have been recognised through numerous awards, including the Environmentalist of the Year Award (2010), Eminent Scientist of the Year Award (2012), PEA Award (UK, 2014), Predictive Technology Award (IIT-BHU, 2022), Outstanding Professor in Technological Innovation Award (2023) and Save The Environment Meritorious Award for Excellence in Academics and Research (2026). His interdisciplinary research-driven work bridges edge-state technology, biomechanics and disaster mitigation, driving scalable, practical solutions for environmental and human safety globally, helping protect communities and ecosystems.

# Infrastructures and Cities



## Doctor Ravindra Jayaratne

**University of East London**
**United Kingdom**

**Paper title:**

**Nature-Integrated Coastal Defences for Resilient Communities**

Dr Ravindra Jayaratne is a leading scholar with over 20 years of academic and research experience in coastal engineering, particularly disaster prevention mechanisms against tsunamis, storm surges and extreme waves. He is co-leader of the Resilient Built Environment research group at the University of East London and a Chartered Civil Engineer (CEng, MICE) of the Institution of Civil Engineers, UK.

He has carried out post-disaster field surveys in the UK, Japan, Indonesia, Thailand, Sri Lanka and Tanzania following major water disasters, including the 2004 Boxing Day tsunami, the 2011 Tohoku tsunami, the 2018 Krakatoa volcano tsunami and the 2013–14 winter storms in the UK, to explore damage mechanisms in coastal defence structures and buildings. He used field data to replicate worst-case hazard scenarios at laboratory scale and run numerical models, developing soft and hard engineering solutions such as management strategies, flood inundation and evacuation maps, and design standards including ASCE/SEI 7, supporting much safer and more resilient coastal communities.

He has authored more than 150 peer-reviewed Q1 journal and conference articles, has supervised 10 PhD students and is currently supervising five. He has strong links with industry, government departments, local councils and academia, has secured funding from UK and Japanese research councils, and is an active public speaker in forums including The Conversation UK, New Scientist and CIWEM's Environment Magazine.



## Doctor Lee P Leon

**The University of the West Indies**
**Trinidad and Tobago**

**Paper title:**

**Conversion of Waste Material into Valuable and Cost-Effective Road Pavement Repair Mix**

Dr Lee P Leon is a Lecturer in Highway and Pavement Engineering in the Department of Civil and Environmental Engineering at The University of the West Indies (UWI), St Augustine Campus, where he coordinates the MSc Civil Engineering and MSc Civil with Environmental Engineering programmes. He holds a BSc (Hons), MSc and PhD in Civil Engineering from UWI and a Postgraduate Certificate in University Teaching and Learning. He is a Chartered Engineer (CEng), Registered Engineer (REng) and Fellow of the Chartered Institution of Highways and Transportation (FCIHT).

His research focuses on pavement engineering, sustainable pavement materials, asphalt technology, transportation infrastructure, pavement asset management and artificial intelligence and soft computing applications in civil engineering. His work promotes circular economy principles through waste-derived pavement materials and resilient transportation infrastructure, especially for Small Island Developing States (SIDS).

He has authored numerous peer-reviewed articles and conference papers and reviews for international journals. He has undertaken consultancy projects for governments, regional organisations and the private sector across the Caribbean in pavement design, transportation engineering, climate-resilient infrastructure and asset management. His current research integrates laboratory testing, field validation and technology commercialisation to enhance the performance and resilience of road infrastructure.

# Infrastructures and Cities



## Professor Moncef Nehdi

**University of Guelph**
**Canada**

Paper title:

**CreteXtract: From Literature to Auditable Chloride-Diffusion Evidence for Low-Carbon Concrete**

Professor Moncef Nehdi is an internationally recognised engineering scholar, innovator and academic leader whose career has focused on translating research into practical solutions for more sustainable and resilient infrastructure. He is inaugural Dean of the College of Engineering at the University of Guelph and a Fellow of the Canadian Academy of Engineering and several leading international engineering institutes.

He has pioneered research at the intersection of low-carbon construction materials, circular economy, infrastructure resilience and artificial intelligence. His early work contributed to the emergence of Portland-limestone cement in North America, helping to reduce the carbon footprint of cement production substantially. His research has also converted industrial, agricultural and mining by-products into construction resources and advanced machine learning for predicting the behaviour, durability and sustainability of civil infrastructure, enabling more robust engineering decisions.

Professor Nehdi is the author of more than 550 scholarly publications and has been ranked among the world's most impactful civil engineering researchers. His honours include the Professional Engineers Ontario Engineering Medal for Research and Development, the Ontario Premier's Research Excellence Award, the ACI Sustainability Award, the Engineering Institute of Canada K.Y. Lo Medal, the ACI Award for Professional Achievement, and major awards from CSCE and the UK Institution of Civil Engineers.



## Professor Hamidreza Norouzi

**City University of New York**
**United States of America**

Paper title:

**High-Resolution Air Temperature Mapping for Heat-Resilient Cities: A Machine Learning Approach**

Professor Norouzi is a Full Professor of Construction Management and Civil Engineering Technology at the New York City College of Technology, City University of New York, and a member of the doctoral faculty in Earth and Environmental Sciences at the CUNY Graduate Center. Trained as a hydrologist, he completed his PhD in Civil Engineering at the CUNY Graduate Center in 2011 and is a licensed professional engineer in New York and Texas.

His work applies satellite remote sensing and machine learning to the thermal and hydrological behaviour of the land surface, spanning microwave emissivity, land surface temperature, urban heat, water quality and availability, flood and sediment monitoring, and air quality. He has published more than 45 peer-reviewed papers and has served as principal or co-investigator on projects totalling over US$20 million, supported by NASA, NOAA, the National Science Foundation, the Department of Energy and the Department of Transportation.

He was a mentor and scientist with the NASA Goddard Institute for Space Studies Climate Change Research Initiative from 2018 to 2025. At City Tech, he directs undergraduate research, a programme that engages more than 400 students each year, and he co-founded Eco Rising Solutions, a geospatial environmental technology firm. He actively works with partners across the Gulf region on urban heat and water resilience to help cities and communities adapt to climate change.

# Infrastructures and Cities



## Doctor Ahmed Ibrahim Osman Ahmed

**Canterbury Christ Church University**
**United Kingdom**

Paper title:

**From Waste to Heat-Resilient Buildings: Biochar Brick Prototypes and an AI-Ready Pathway for Low-Carbon Infrastructure**

Dr Ahmed I. Osman is a Senior Lecturer in Energy Engineering and Course Director of the MSc Renewable and Sustainable Energy Transition at Canterbury Christ Church University, United Kingdom. Before joining Canterbury, he was a Senior Research Fellow at Queen's University Belfast, where he worked across sustainable energy, environmental engineering and low-carbon technologies, building a foundation in interdisciplinary energy research.

His research focuses on converting scientific ideas into practical routes towards Net Zero. It spans hydrogen and renewable fuels, carbon capture and utilisation, biochar and carbon removal, environmental catalysis, waste valorisation, circular-economy systems and low-carbon construction materials, integrating experimental research with life-cycle assessment, techno-economic analysis and, increasingly, artificial intelligence and machine learning to support evidence-based decisions for a sustainable future.

Dr Osman has authored more than 200 peer-reviewed publications, with over 35,000 citations and an h-index of 92. He is a member of the EPSRC Peer Review College, a Distinguished Editor of Environmental Chemistry Letters and an editorial board member of Scientific Reports. He also leads 3ELM TUBE, an Arabic science-communication platform with approximately four million followers, making energy, climate and sustainability research accessible to wider audiences and inspiring future scientists, particularly across the Middle East and North Africa.



## Doctor Alex Manuel Sanchez

**University of Engineering and Technology (UTEC)**
**Peru**

Paper title:

**Automated Urban Road Inspection and Maintenance Planning: A Deep Learning and RPAS Approach for Optimised Budget Allocation**

Dr Alex Manuel Sanchez is a Civil Engineer with a PhD in Transportation Engineering and more than 20 years of professional experience in consulting, project management and administration within the transportation sector. He is also a professor and researcher at the University of Engineering and Technology (UTEC), where he teaches undergraduate students, and teaches graduate-level courses at other institutions.

His career has focused on mobility planning, road infrastructure design and traffic safety, applying advanced methodologies in data analysis and statistics to optimise processes and strengthen decision-making. He has collaborated with institutions such as the Florida Department of Transportation (FDOT) in the US and directed projects involving public and private stakeholders in Peru and internationally. His expertise includes technical coordination and supervision of transportation projects, contributing strategies that mitigate and adapt to the impacts of real estate developments and land-use changes on mobility and the environment.

Building on his doctoral research, Dr Sanchez has produced robust studies based on large-scale datasets, with strategic recommendations for freight transportation, urban mobility improvement and environmental sustainability. His research interests focus on the application of artificial intelligence in transportation engineering, highway safety and urban mobility.

# Infrastructures and Cities



## Professor Budi Indra Setiawan

**IPB University**
**Indonesia**

Paper title:

**FONi: A Fertigation Technology for Enhancing Urban Family and Community Food Garden Productivity**

Professor Budi Indra Setiawan was born in Tasikmalaya, West Java, Indonesia, on 28 June 1960 and has worked at Bogor Agricultural University, now IPB University, since 1985. He earned a bachelor's degree in Soil and Water Engineering from IPB in 1983, followed by master's and doctoral degrees in Agricultural, Biological and Environmental Engineering from the University of Tokyo, Japan, in 1990 and 1993. He completed PPSA XVII Lemhannas in 2011.

He specialises in water resources engineering, irrigation and drainage, hydrology, soil physics and water management, with interests in rainwater harvesting, peatland water systems and sustainable agricultural infrastructure. His work covers irrigation performance, drainage systems, rice-field water management, peatland mapping, water-table control and agricultural water productivity.

Professor Setiawan has been Head of the Water Resources Engineering Division since 2008, Head of the Department of Civil and Environmental Engineering (2013–2015) and Expert to the Minister of Agriculture on Agricultural Infrastructure (2015–2019). He has supervised more than 200 undergraduate and postgraduate students, published extensively and received more than 20 awards, including National Outstanding Lecturer, the PII Engineering Award and the PAWEES International Award. He holds several patents in irrigation and water management technologies and remains active in KNI-Inacid, PAWEES and the International Peat Society.

# Mobility and Logistics



# Mobility and Logistics



## Doctor Ashok Chopra

**Amity University Dubai**
**United Arab Emirates**

**Paper title:**

**A Regulatory Framework for Low-Emission Urban Freight: Incentivising Fleet Electrification and Digital Integration in Dense Urban Environments**

Dr Ashok Chopra is a highly skilled and experienced Senior Academician in higher education teaching, training and development, with strong learning acumen. He is Registrar, Programme Chair of the PhD Programme and Member of the University Research Committee at Amity University Dubai, and Associate Professor at Amity Business School.

He has more than 24 years of international industry experience in senior and leadership positions, more than ten years of entrepreneurial experience and more than 13 years of experience as an academician and corporate trainer, a blend of academia, industry and entrepreneurship. He has conducted over 350 corporate training programmes through an entrepreneurial venture and provided management consultancy to several organisations.

Dr Chopra has published two books and more than 110 papers in international journals of repute and serves on the review, editorial and advisory boards of reputed journals, conferences and institutions.



## Professor Amjad Gawanmeh

**University of Dubai**
**United Arab Emirates**

**Paper title:**

**Framework for Unified Mobility-as-a-Service Platform Design Integrating Robotaxi and eVTOL Air Taxi with Public Transit in Dubai**

Professor Amjad Gawanmeh is a Professor of Computer Engineering and Director at the University of Dubai, UAE, and Affiliate Adjunct Professor at Concordia University, Montreal, Canada. He earned his BSc in Electrical and Computer Engineering from JUST, Jordan (1998), and his MSc (2003) and PhD (2008) from Concordia University. He served at Khalifa University (2010–2019) before joining the University of Dubai in January 2020, and has been a visiting scholar at Syracuse University, the University of Quebec and Concordia University.

His research focuses on the verification of hardware, security and healthcare systems; modelling and analysis of complex systems, including cyber-physical systems; and performance analysis. He has an extensive publication record, including two edited books, three book chapters, more than 50 Scopus-indexed journal papers and more than 80 conference papers.

Professor Gawanmeh is Editor-in-Chief of the International Journal of Cyber-Physical Systems (IGI Global) and Associate Editor of IEEE Access and Human-centric Computing and Information Sciences (Springer), and reviews for multiple IEEE, Elsevier, Wiley and MDPI journals. An active IEEE Senior Member, he serves as IEEE UAE Section Conference Coordinator, GRSS UAE Section Society Chapter Chair and IEEE HKN Nu Nu Chapter Advisor. He has co-chaired workshops at major conferences, including Globecom, ICC and ICDCS, and is also an ACM member.

# Mobility and Logistics



## Doctor Yijing Li

**King's College London**
**United Kingdom**

Paper title:

**AI/ML-Enhanced Satellite Tracing of Supply Chain Disruptions during Extreme Flooding**

Dr Yijing Li is a Reader in Urban Informatics Education at King's College London, where her work bridges computer science, geography and urban science. She joined King's in 2018, having previously held lectureships at the University of Warwick (2017–2018) and the Peking University UK Campus, China Executive Leadership Academy Pudong (CELAP) (2014–2017). She holds a PhD in the Geography of Crime from the University of Cambridge and an MSc in Urban Ecology from Peking University.

A passionate educator and interdisciplinary researcher, she uses rigorous quantitative methodologies, advanced geospatial analytics, machine learning and multi-source big data to address complex, pressing urban challenges, translating data into actionable insight for policy and practice. Her teaching and research explore how data and spatial analysis can inform smarter, safer and more resilient cities in an increasingly urbanised world.

Dr Li's work covers four areas: urban criminology and spatial safety, using Geographic Information Systems (GIS) to evaluate the equity and efficacy of policing strategies; environmental health and sustainable urbanism; methodological innovation in spatial analytics, including environmental forecasting and scalable Bayesian double machine learning for high-dimensional causal estimation; and urban informatics education and employability, researching pedagogy in data-centric computer science programmes to enhance career readiness and equip graduates for data-driven careers.



## Professor Tarak Nandy

**University of Malaya**
**Malaysia**

Paper title:

**Neuro-Symbolic Swarm Traffic Intelligence (NSSTI): A Self-Evolving Multi-Agent AI System for Predicting and Preventing Urban Traffic Congestion**

Professor Tarak Nandy is a Senior Lecturer at the Faculty of Computer Science and Information Technology, University of Malaya, Malaysia. He received his PhD in Computer System and Technology from University of Malaya. Previously, he was Head of Department (Computer Science) and Assistant Professor at UCSI University, Malaysia, and has held academic positions at Lovely Professional University, India; Maldives Business School, Maldives; and Narula Institute of Technology, India.

His research interests include artificial intelligence, machine learning, intelligent systems, vehicular ad hoc networks (VANETs) and authentication protocols. He has authored over 30 publications in reputable international journals and conferences, including Computer Communications, IEEE Sensors Journal and Sustainability.

He is a regular reviewer for several high-impact journals, including IEEE Transactions on Industrial Informatics and Computer Communications, and has reviewed numerous conference papers. He has served as Section Editor and Lead Guest Editor for special issues of CMC and Big Data Journal, delivered invited and keynote talks at international conferences, and served as session chair and technical programme committee member for multiple academic events. He is a Graduate Member of the IEEE and holds professional certifications in Malaysia under MBOT.

# Mobility and Logistics



## Doctor Irina Neaga

**University of Wales Trinity Saint David**
**United Kingdom**

Paper title:

**Human-Centred AI and Blockchain Systems for Sustainable Supply Chains**

r Irina Neaga is a Senior Lecturer at the University of Wales Trinity Saint David (UWTSD), UK, with extensive international academic and research experience spanning the United Kingdom, Canada, Finland, the Netherlands and Romania. She holds a PhD from Loughborough University and a BEng and MSc in Computer Systems Engineering from the Gheorghe Asachi Technical University of Iași, Romania. She is a Fellow of the Higher Education Academy and a Chartered Member of the Chartered Institute of Logistics and Transport (UK).

Her research focuses on the digital transformation of logistics, manufacturing and industrial systems, exploring how Industry 4.0 and Industry 5.0 technologies, artificial intelligence and data-driven innovation can accelerate sustainability and support the transition to a circular economy. She seeks to bridge technological advancement with societal and environmental impact, addressing challenges in supply chains, resource efficiency and sustainable production.

Before joining UWTSD, she was a researcher at Loughborough University's Schools of Engineering and Business, contributing to multidisciplinary initiatives in systems engineering, supply chain innovation and digital transformation. She has published in the Journal of Business Research, International Journal of Production Research and Springer publications, and has played an active role in European-funded projects and industry-led R&D collaborations. She is committed to interdisciplinary research, innovation-led education and the responsible adoption of emerging technologies.



## Doctor Neeraj Pandey

**University College London (UCL)**
**United Kingdom**

Paper title:

**From Communication Signals to Radar Images: 5G/6G ISAC for Safer Connected Mobility**

Dr Neeraj Pandey is a Postdoctoral Researcher in the Department of Electronic and Electrical Engineering at University College London (UCL), where he works on integrated sensing and communications (ISAC), radar signal processing and sensing for connected and automated vehicles. He received his PhD in Radar Signal Processing from Indraprastha Institute of Information Technology Delhi (IIIT-Delhi), where his doctoral research focused on inverse synthetic aperture radar (ISAR) imaging and classification of automotive targets, including radar simulation, machine learning and explainable AI for target recognition.

His current research investigates how OFDM and 5G/6G communication signals can be reused for sensing, including delay–Doppler processing, target detection, range and velocity estimation and radar imaging. At UCL, he contributes to research on joint communication and sensing for future wireless networks, including the SafeRoute-6G and 6G-MUSICAL projects. His broader interests include SAR/ISAR simulation, electromagnetic target modelling, machine learning for radar perception and next-generation wireless sensing systems.

Dr Pandey's research has been published in IEEE Transactions on Intelligent Vehicles and IEEE Transactions on Radar Systems and presented at international radar conferences. Before joining UCL, he was a Senior Simulation Engineer at Bifrost in Singapore, developing synthetic-aperture radar simulation tools for sensing and autonomous-system applications.

# Mobility and Logistics



## Doctor Tripti Paul

**International University of Rabat (UIR)**
**Morocco**

Paper title:

**Algorithmic Airspace Governance and the Coordination Paradox: Control, Coupling and Resilience in Digital Aviation Systems**

Dr Tripti Paul is an Assistant Professor of Supply Chain Management and Information Systems at Rabat Business School, Université Internationale de Rabat, Morocco. She holds a PhD in Management from the Indian Institute of Technology (Indian School of Mines) Dhanbad. Before entering academia, she worked for eight years as a software developer, which gave her research a strong interdisciplinary foundation. This combination of industry and academic perspectives informs her practice-oriented approach to teaching and research.

Her research examines digital transformation, artificial intelligence, blockchain, supply chain resilience, sustainability and technology-enabled coordination across complex operational ecosystems, with a particular interest in how emerging technologies reshape the way organisations collaborate, adapt and create value. She applies qualitative, experimental, survey-based and secondary-data methods to address theoretically relevant and managerially significant problems. Her studies combine rigorous theory building with insights relevant to managers, policymakers and practitioners.

Dr Paul's work has appeared in international journals including Industrial Marketing Management, Technological Forecasting and Social Change, Journal of Business Research, Technovation and Journal of Business Logistics, advancing scholarly debate. Through her research and teaching, she aims to help organisations to build more resilient, sustainable and technology-ready supply chains.



## Doctor Sandip Rakshit

**International University of Rabat (UIR)**
**Morocco**

Paper title:

**Algorithmic Airspace Governance and the Coordination Paradox: Control, Coupling and Resilience in Digital Aviation Systems**

Dr Sandip Rakshit is an Associate Professor in Supply Chain and Information Systems at Rabat Business School, International University of Rabat, Morocco. He holds dual PhD degrees, one in Computer Science Engineering (Information Systems) from Jadavpur University, India, and another in Management (Business and Technology) from the Indian Institute of Technology Dhanbad.

With more than 24 years of academic and research experience across India, Vietnam, Morocco, Singapore, the UAE and Africa, including teaching at American, Australian and French universities, his expertise spans digital transformation, artificial intelligence, blockchain and social logistics. He has served as a judge and mentor for startup and business competitions across Southeast Asia, Africa and the Middle East, supporting young entrepreneurs in designing scalable, socially impactful ventures, and is interested in how business innovation can address community challenges in emerging and underserved markets.

He has published more than 20 papers in leading peer-reviewed international journals including Technovation, Journal of Business Research, Industrial Marketing Management, Technological Forecasting and Social Change and Annals of Operations Research. He has authored six textbooks with global publishers, including McGraw Hill and Shroff Publishers, as well as more than 30 case studies, and holds multiple patents across the UK, Germany, India and Africa. He is passionate about nurturing student innovation.

# Mobility and Logistics



## Professor Yilmaz Uygun

**Constructor University**
**Germany**

Paper title:

**Vertaxis: Satellite-Enabled Predictive Maintenance for Vertical-Axis Wind Turbines**

Professor Yilmaz Uygun is Professor of Logistics Engineering, Technologies and Processes at Constructor University Bremen, where he also chairs the MSc programmes in Supply Chain Management and Supply Chain Management Online. He holds two doctorates, awarded by the University of Duisburg-Essen and TU Dortmund, as well as undergraduate and graduate degrees in Logistics Engineering, Logistics Management, and European Studies in Technology and Management.

His work sits at the intersection of logistics, industrial engineering, digital technologies and sustainable manufacturing. His research focuses on data-driven analysis and algorithmic optimisation of logistics and supply chain processes, anticipatory inventory planning using machine learning, discrete-event and agent-based simulation, additive manufacturing, and the design and development of vertical-axis wind turbines.

Professor Uygun has led and contributed to numerous publicly and industry-funded research projects in fields including wind energy, large-scale additive manufacturing, steel production and automotive supply chains. He is also involved in technology transfer and entrepreneurship as co-founder and COO of NebulaForm GmbH, which commercialises vertical-axis wind turbines and digital monitoring and predictive-maintenance solutions. His broader aim is to translate research in AI, logistics and engineering into scalable solutions for resilient and sustainable industrial and energy systems.

# Open and Speculative



# Open and Speculative



## Doctor Ivana Beveridge

**Sorbonne University Abu Dhabi**
**United Arab Emirates**

Paper title:

**Sovereign Aesthetics: The Abaya as Living Heritage in the Age of Artificial Intelligence**

Dr Ivana Beveridge is Head of the master's programme in Marketing, Communication and Media at Sorbonne University Abu Dhabi and an affiliated GRIPIC researcher. She previously served as a Professor of Practice at the University of Houston. She has a PhD from Sorbonne University, Paris, exploring how Chinese parents reconcile conflicting cultural values in their children's education. Her work connects academic insight with professional practice, preparing students for successful careers in an increasingly global and rapidly changing communication industry.

Her research, published in Tier A journals and books, explores a paradox lens across cultures and domains such as food and sustainability, analysing how cultural tensions are negotiated across domains, helping organisations and individuals understand how competing values can coexist rather than cancel each other out. This perspective offers a nuanced and practical understanding of consumer behaviour, family decision-making and cross-cultural communication.

In addition to her academic experience, she has held international management positions with global communication agencies, bringing extensive practical experience and award-winning communication campaigns. Her client roster spans Fortune 100 companies, governments and start-ups. This dual perspective allows her to link rigorous research with the realities of the global market, ensuring that her teaching and scholarship remain relevant to the evolving needs of industry and society.



## Mr Tushar Kanade

**Harvard University**
**United States of America**

Paper titles:

**The Library of Babel Has a Power Bill: A Speculative Reckoning with the Energy Cost of Possible Worlds**

**Cyborg Citizenship: Augmented Cognition, Public Space, and the Next Civic Contract**

Mr Tushar Kanade is a researcher and writer on the governance of frontier technology and infrastructure. He founded The Frontier State, a research and publishing initiative combining long-form writing, a podcast and applied policy work on the intersection of venture capital, tech policy and deep tech. He has been a researcher at Harvard University and MIT. He holds a Master in Public Administration from the Harvard Kennedy School, where he was an Aga Khan and J. N. Tata Scholar.

His research centres on what he calls the duration problem: the mismatch between long timescales of infrastructure and institutions and shorter cycles of politics and capital. It runs through his work on regional artificial intelligence infrastructure, the energy cost of generative computing and the civic governance of human augmentation. With Paulo Carvão, he developed the AI Infrastructure Triad, a framework for the trade-offs between progress, sustainability and equity in regional AI infrastructure, published in AI & Society.

Before research, he spent a decade in roles including leading India strategy for Virgin Hyperloop, working on the Mumbai–Pune corridor he co-founded while serving in the Maharashtra Chief Minister's Office, and investing in climate technology at Voyager Ventures.

# Open and Speculative



## Professor Patricia Torres-Sánchez

**Tecnológico de Monterrey**
**Mexico**

Paper title:

**Translating Water Innovation in Public Space: Visible and Invisible Prototypes**

Professor Patricia Torres-Sánchez is a Full Professor at the School of Architecture, Art and Design at Tecnológico de Monterrey, Mexico. An architect and industrial designer, she holds a PhD in Architecture, awarded cum laude by the Polytechnic University of Catalonia. She has held academic leadership positions including Regional Dean, Department Director and Programme Director, and combines teaching, research and applied innovation.

Her work focuses on transdisciplinary collaboration, design for complex challenges, science-based entrepreneurship, gender-informed innovation and educational experiences that connect research with real-world implementation. She has led projects on water innovation, public engagement, resilience, care systems and use of artificial intelligence in higher education. Her work has also been published and presented internationally.

Professor Torres-Sánchez co-developed Seres de Agua STEAM, a UNAM–Tecnológico de Monterrey initiative that translates water research into an interactive public experience, and co-founded Qdots Analytical Solutions, the company developing AVOKDO, a portable platform for water-quality monitoring. She also co-founded All Women Coo, which works on design and innovation through a gender perspective. In 2026, she received Tecnológico de Monterrey's Profesor Inspirador Award and has also received the Mujer Tec Award for transformative leadership and the Tecnológico de Monterrey Research Award.

# Socio-Economic Empowerment, Digital Economies and Future Markets



# Socio-Economic Empowerment, Digital Economies and Future Markets



## Doctor Ransford Kwaku Afeadie

**University of Professional Studies**
**Ghana**

Paper title:

**An AI-Enabled Integrated Culturally Competent Behaviour Change Framework to Enhance Sexual and Reproductive Health Service Utilisation among Migrant Adolescents in Urban Poor Settings in Ghana**

Dr Ransford Kwaku Afeadie is a Research Fellow at the Institute of Work, Employment and Society (IWES), University of Professional Studies, Accra (UPSA), Ghana. He holds a PhD in Public Health and an MPhil in Migration Studies from the University of Ghana, and a certificate in implementation research (MOOC) on infectious diseases of poverty from Gadjah Mada University and UNICEF/UNDP/World Bank/WHO–TDR.

As a public health researcher and academic, his work focuses on implementation science, behavioural health and the co-design of culturally appropriate, evidence-based interventions that advance health equity among vulnerable populations. His research interests include adolescent sexual and reproductive health, maternal and child health, communicable and non-communicable diseases, migration health, health systems strengthening, occupational health and safety, health communication and social epidemiology. His work aims to turn research evidence into practical health-improving solutions.

Dr Afeadie has published in peer-reviewed international journals and reviews for several Scopus-indexed public health journals. He is experienced in intervention design, iterative testing and adaptation, and in qualitative and quantitative data analysis, including complex survey designs. He is a member of the United Nations Migration, Health and Development Research Initiative (UN-MHADRI), the African Mobility Scholars Association (AMSA) and the International Behavioural Trials Network (IBTN).



## Mr Nithul Bagathi

**Singapore University of Technology and Design**
**Singapore**

Paper title:

**Smorphi Imaginary Pro: Robotics Education for Every Learner at USD 1 a Month**

Mr Nithul Bagathi is a Senior Research Assistant in the Engineering Product Development (EPD) pillar at the Singapore University of Technology and Design (SUTD), working with Professor Mohan Rajesh Elara at the ROAR Lab. He holds a dual Master's degree in Nano Electronic Engineering and Design (MNEED), jointly awarded by Chang Gung University, Taiwan, and SUTD, where he graduated top of his cohort and was inducted as an honorary member of the Phi Tau Phi Scholastic Honour Society.

His research spans reconfigurable robotics, perception and human-centred deployment, including cloud-enabled area-coverage maximisation for multi-robot teams, sim-to-real transfer for robotic manipulation, and the ErgoScore and ErgoGuard systems for vision-based ergonomic risk assessment. He led the design and development of Smorphi Imaginary Pro, the platform described in this paper, and its commercialisation through Wefaa EduTech, an SUTD spin-off.

Mr Bagathi also works on AI dataset collection of human bed-making demonstrations to support human-to-humanoid skill transfer in service robots. He served as a Technical Committee member for the IEEE International Conference on Robotics and Mechatronics 2025 and is a peer reviewer for IEEE-cosponsored venues, including MERCon 2026.

# Socio-Economic Empowerment, Digital Economies and Future Markets



## Professor David Camacho

**United Arab Emirates University**
**United Arab Emirates**

Paper title:

**Towards Explainable Multimodal Misinformation Detection: Benchmarking Transformer-Based Architectures for Digital Trust**

Professor David Camacho has been Dean of the College of Computing and Artificial Intelligence at the United Arab Emirates University (UAEU) since August 2026. In this role, he leads the college's academic and research development in computing and AI. He holds a BSc and MSc in Physical Sciences from the Complutense University of Madrid and a PhD in Computer Science and Artificial Intelligence from Carlos III University of Madrid (2001), recognised with the Extraordinary Doctoral Award in 2004.

Before joining UAEU, he was Full Professor at the Technical University of Madrid (UPM) and at the Autonomous University of Madrid, where he also served as Vice-Dean for Academic Affairs. He has been appointed Visiting Professor at institutions in Poland, China and the UK and has collaborated with the University of California San Diego. His research covers machine learning, social network analysis, evolutionary computation and applied challenges including disinformation, IoT security and aerospace systems, with a focus on translating AI-based methods into real-world applications.

Professor Camacho has published over 220 peer-reviewed articles, led more than 50 competitive R&D projects and secured over €35 million in research funding. He has supervised 17 doctoral theses and founded the AIDA research group. He is Editor-in-Chief of Expert Systems and the International Journal of Interactive Multimedia and Artificial Intelligence (IJIMAI), and is committed to training the next generation of researchers.



## Professor Yasemin Güllüoğlu

**Social Sciences University of Ankara**
**Turkey**

Paper title:

**AI-Shield: A Legal-Tech Toolkit and Gamified Framework for Algorithmic Equity in Family Law**

Professor Yasemin Güllüoğlu is an academic at the Social Sciences University of Ankara, Turkey specialising in civil law, human rights and digital transformation. Her research focuses on family law, women's and children's rights, and the social and legal impacts of artificial intelligence and digitalisation. She conducts interdisciplinary studies aimed at developing human-centred legal frameworks within the context of smart cities and digital governance.

Alongside her academic work, she is actively involved in legal support processes and mediation practices, particularly in cases involving women and children. She has participated in numerous national and international projects and training programmes aimed at supporting the academic and professional development of law students. She also engages in voluntary initiatives focused on the empowerment of women, contributing to efforts in gender equality and social justice.

Professor Güllüoğlu's work examines how emerging technologies reshape legal protection and the rights of individuals, particularly women, children and other vulnerable groups, and seeks to ensure that digital transformation remains fair, inclusive and rights-based. She is committed to linking academic research with real-world impact, focusing on the protection of vulnerable groups, the advancement of digital rights and the development of inclusive legal and policy frameworks for future digital societies.

# Socio-Economic Empowerment, Digital Economies and Future Markets



## Doctor Hammed Oluwaseyi Musibau

**Adelaide University**
**Australia**

Paper title:

**Education Quality and Economic Growth: A New International Measure of Quality of Education**

Dr Hammed Musibau is a Research Fellow and Assistant Professor at the School of Economics and Public Policy, University of Adelaide, where he also serves as a Government-Commissioned Research Economist. He holds a PhD in Economics from the University of Tasmania. His academic and policy roles combine rigorous economic analysis with direct engagement with government decision-makers.

His research spans labour economics, environmental and macroeconomic policy, education economics, international trade and applied econometrics. His work examines labour needs in Australia, the socio-economic impacts of energy and environmental reforms, and the role of human capital in economic growth. Across these areas, he applies quantitative and econometric methods to questions of practical importance for policymakers, employers and communities.

Dr Musibau has contributed to major government-funded projects, including agricultural productivity initiatives and education-quality data construction across OECD countries. His commissioned research for government seeks to provide evidence that can inform policy design, workforce planning and long-term economic development. Dr Musibau's applied, policy-relevant research aligns with the Short Papers Platform's mission to connect academic insight with industry and public-sector innovation.



## Doctor Vishnu Nair

**University of Dubai**
**United Arab Emirates**

Paper title:

**From Licensing to Lifecycle Compliance: A Legal Readiness Scorecard for Tokenised Digital Asset Markets in Dubai**

Dr Vishnu Nair is Assistant Professor of Law and Programme Director for the LLM programme at the College of Law, University of Dubai, United Arab Emirates. He is also an Honorary Lecturer at the School of Law, University of Aberdeen, Scotland. He holds a PhD in International Law from the National University of Advanced Legal Studies (NUALS), Kochi, India. His academic work includes undergraduate and postgraduate teaching, research supervision and programme development, and he has worked in higher education in the UAE for more than three years.

His research has focused on public international law, particularly self-determination, secession, contested statehood, human rights and comparative constitutional questions. More recently, it has expanded into law and emerging technologies, including artificial intelligence, blockchain and digital assets, technology regulation, and the implications of technological change for legal education and professional practice.

Before moving fully into academia, Dr Nair practised law in India for nearly seven years in litigation and advisory matters, which continues to shape his interest in connecting doctrinal legal analysis with practical legal and regulatory questions. He has presented his work at academic conferences and universities in Europe, Asia and the Middle East, and remains engaged in research and collaboration across international law, legal education and law and technology.

# Socio-Economic Empowerment, Digital Economies and Future Markets

## Doctor Dare Olateju

**University of Jos**
**Nigeria**



**Paper title:**

**Blue-Optimize: An AI-Driven Bankability Rating for Sustainable Investments in Emerging Economies**

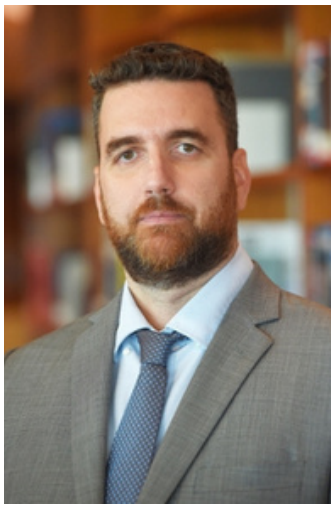
Dr Dare Olateju is a Lecturer in the Department of Banking and Finance at the University of Jos, Nigeria. A Chartered Accountant (ACA) and scholar of financial economics, his research programme bridges empirical corporate finance, advanced econometrics and digital finance, specifically focusing on sustainability practices, sustainable capital allocation, sustainable investments and value creation across emerging economies.

His theoretical and methodological contributions include the conceptualisation of Sustainability Trade Theory and the development of econometric-AI assessment architectures. He has authored numerous books and published extensively in high-rated scholarly journals. His research endeavours have been supported by competitive funding, including grants from TETFund IBR and the NUL-WTO research grant, alongside active research collaborations spanning New Zealand, France, Lesotho and the United Kingdom.

He has presented his research at premier academic conferences and international forums, including the National University of Lesotho World Trade Organization Chairs Programme, the Academic Association for Organization Studies in Japan, research colloquia at the University of KwaZulu-Natal in South Africa and academic conferences hosted by National University, Yokohama, Japan. He also actively manages digital publishing infrastructure for scholarly journals, advancing open-access dissemination and cross-border research collaboration within and outside Africa.

## Professor Efstathios Polyzos

**Zayed University**
**United Arab Emirates**



**Paper title:**

**Federated Graph Learning for Anti-Money Laundering Detection in the UAE: A Privacy-Preserving Framework for Digital Financial Compliance**

Professor Efstathios (Stathis) Polyzos is Associate Professor of Finance at Zayed University and Associate Dean of the College of Interdisciplinary Studies. He holds a PhD in Finance (2019) from the University of the Aegean. He also studied Economics at the University of Warwick (BSc, 2001) and Banking and Finance at the Open University of Cyprus (MA, 2014), and holds an MSc in Computer Science (2007) from Staffordshire University. His academic background combines economics, finance and computer science, which underpins his quantitative approach to financial research.

He has extensive experience in the banking sector and has also worked as a freelance consultant and researcher, participating in academic and business projects on FinTech and financial innovation. His major fields of interest are financial market modelling, financial stability, machine-learning forecasting and econometric modelling. He combines practical industry experience with academic research, bringing insights from banking and consultancy into his work on financial markets and innovation.

Professor Polyzos has published papers in notable journals, including the Financial Review, Journal of International Money and Finance, Journal of Futures Markets, Journal of Financial Research, International Journal of Finance and Economics, Energy Economics and Information & Management. His research appears in leading outlets across finance, economics and information systems.

# Socio-Economic Empowerment, Digital Economies and Future Markets



## Professor G K Viju

**Ahmedabad Institute of Business Management**
**India**

Paper title:

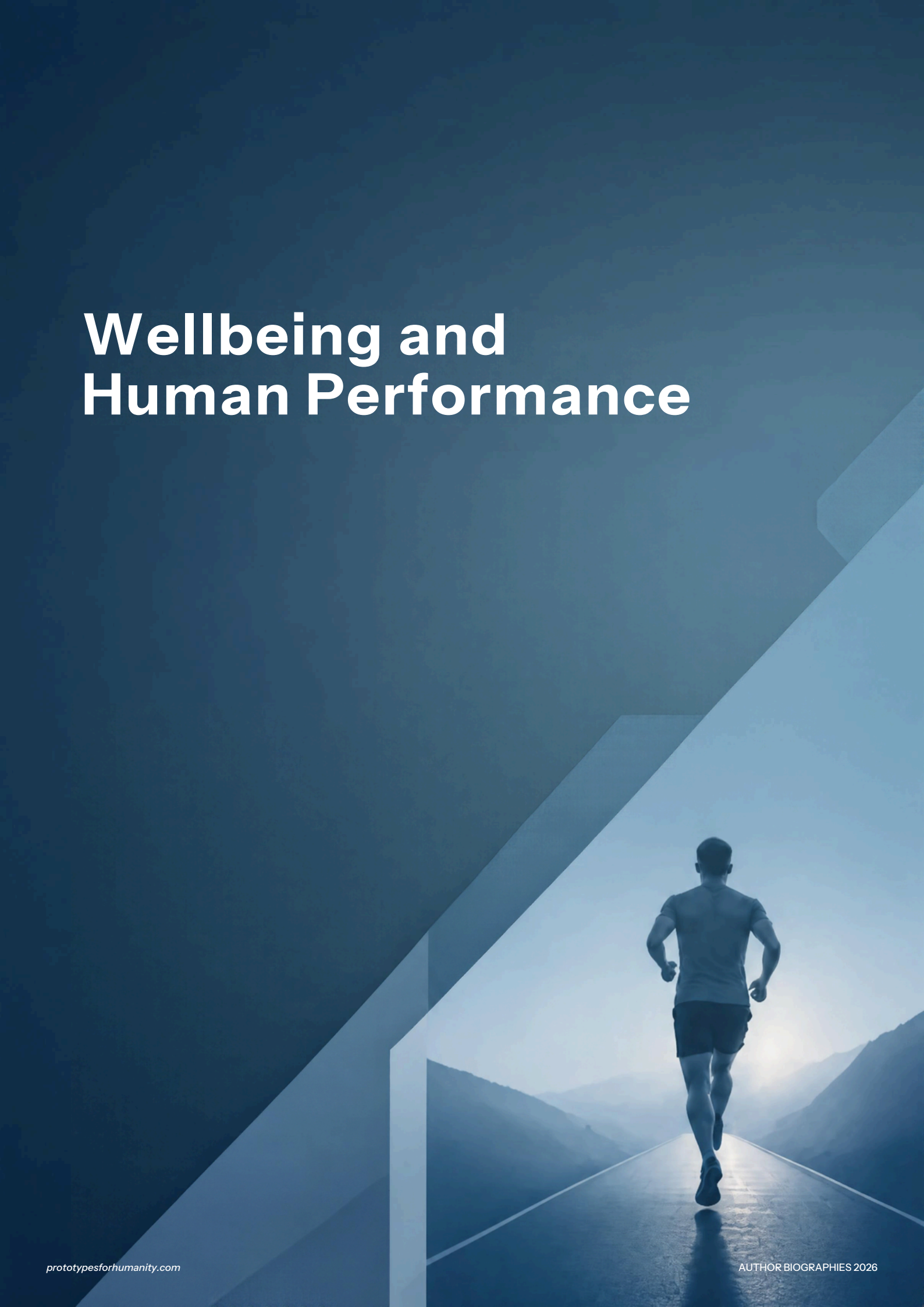
**HealthBridge AI: A Lightweight, Offline-First Diagnostic Support System for Community Health Workers in Resource-Constrained Settings**

Professor G K Viju is a globally experienced academic leader, researcher and strategist with over 28 years of Indian and international expertise in higher education, digital transformation and technology-driven institutional leadership. He is currently Director (Management) at the Ahmedabad Institute of Business Management and holds multiple doctoral degrees in Business Administration, Educational Quality Management and Software Engineering.

Recognised for integrating artificial intelligence, digital governance and data-driven systems into academic and organisational management, he brings an interdisciplinary perspective that bridges AI, management strategy, quality assurance and innovation ecosystems. His work focuses on how AI can enhance decision-making, optimise institutional performance, transform leadership models and build future-ready organisations. A prolific scholar, he is the author of 26 books and over 1,885 research publications.

Professor Viju has led large-scale digital transformation initiatives, implemented AI-enabled academic frameworks and designed modern accreditation and quality systems. He has delivered more than 200 seminars globally, supervised doctoral research and mentored leaders across academia and industry. Through his scholarship and leadership, he advocates a new era of intelligent management, in which human insight and artificial intelligence converge to create sustainable, innovative and globally competitive institutions.

# Wellbeing and Human Performance



# Wellbeing and Human Performance



## Doctor Mehaboobathunnisa Sahul Hameed

**Dubai Health Center for Innovation and Technology**
**United Arab Emirates**

Paper title:

**EDA-based Pain Classification Using Machine Learning: The PainDetect Multisite Study**

Dr Mehaboobathunnisa Sahul Hameed is a Computer Scientist in the Data-AI Lab at Dubai Health, Dubai, UAE. She holds a PhD in Computer Engineering and spent six years in academia before completing a master's degree in Artificial Intelligence and Machine Learning at Mohamed bin Zayed University of Artificial Intelligence (MBZUAI). This path, from academia to specialist training in AI, underpins her applied work in healthcare.

Her research focuses on developing AI solutions for healthcare, with interests in deep learning and computer vision. She is a co-author of BOrg, a brain organoid-based mitosis dataset for the automatic analysis of brain diseases, which builds on advances in using stem cell-derived organoids to study human brain development. The work was presented at the 22nd IEEE International Symposium on Biomedical Imaging (ISBI) in 2025 and reflects her focus on biomedical image analysis.

Her work sits at the intersection of computer engineering, machine learning and clinical data. By applying deep learning and computer vision to medical and biological images, she aims to develop tools that can support researchers and clinicians in analysing complex data. Working within an integrated academic health system, she contributes to the Data-AI Lab's efforts to translate advances in artificial intelligence into practical healthcare applications. Her interests centre on methods that are reliable and relevant to real clinical settings.



## Doctor Sixto Enrique Campaña Bastidas

**National Open and Distance University**
**Colombia**

Paper title:

**VitalSense MIA: An Integrated AI and IoT Early Warning System to Prevent Obstetric Near Miss and Maternal Mortality in Remote Communities**

Dr Sixto Enrique Campaña Bastidas is an Associate Professor and Researcher at National Open and Distance University (UNAD), Colombia, where he has taught Telecommunications Engineering since 2010. He holds a PhD in Engineering (Telecommunications) from Pontifical Bolivarian University, a Master's degree in Free Software from Autonomous University of Bucaramanga and a specialisation in Networks and Telematic Services from University of Cauca.

Since 2002, he has directed the DAVINCI Research Group at UNAD, leading projects in telecommunications, networks, computer security and education technology, and he was Director of UNAD's Pasto campus (2012–2014). Between 2018 and 2025, he undertook postdoctoral research in the Internet of Things and machine learning applied to health and elderly care, with research stays at Halmstad University, Sweden (Dr Martin Cooney), and the University of Jaén, Spain (Dr Macarena Espinilla Estévez), focusing on intelligent environments and fuzzy systems.

Dr Bastidas's current research applies artificial intelligence and IoT to public health challenges in underserved communities. He leads VitalSense MIA, an AI- and IoT-based early-warning system developed with San Pedro Hospital Foundation to prevent obstetric near-miss and maternal mortality in remote, conflict-affected rural areas, combining a predictive risk model, a wearable monitoring device and a clinical dashboard. He has authored numerous articles and books.

# Wellbeing and Human Performance



## Professor Consuelo Cano

**Pontifical Catholic University of Peru**
**Peru**

Paper title:

**Minivent: A Portable Neonatal Ventilation Device with Real-Time Pressure and Volume Monitoring**

Professor Consuelo Cano is an Industrial Designer from the Pontifical Catholic University of Peru (PUCP) and holds a Master's degree in Innovation and Technology Management and Policy. She has completed doctoral studies in Strategic Management, specialising in Innovation and Management in Higher Education, within the Consortium of Universities of Peru. She is a RENACYT researcher, university professor, and technology and innovation manager.

Since 2016, she has taught undergraduate and postgraduate courses in design, engineering, innovation, product development and entrepreneurship at Peruvian universities. Her research interests include Art–Science collaboration, innovation management, STEAM education, industrial design and interdisciplinary research. She is involved in PUCP research groups at the intersection of design and engineering and has participated in projects on medical devices, rehabilitation technologies, robotics and educational technologies.

Professor Cano's professional experience includes technology transfer, intellectual property and technological package development, supporting the translation of academic research into practical applications. She has contributed to academic publications and patented developments in industrial design, healthcare, rehabilitation and robotics, and her collaborative projects have received awards at international invention exhibitions in Geneva, Korea and Canada.



## Professor Harshit Desai

**MIT Art, Design and Technology University**
**India**

Paper title:

**Predicting High-Risk Pregnancy Using Explainable Machine Learning: A Human-Centred Design Approach from India**

Professor Harshit Desai is a design educator, researcher and academic leader with over 16 years of experience in design management, innovation and entrepreneurship. He currently serves as Director – MIT ID Innovation and Head of Industry Relations at MIT Institute of Design, MIT ADT University, Pune, where he also teaches in the Design Management and Innovation & Entrepreneurship programmes.

His work focuses on bridging academia and industry by developing practice-led learning models, industry collaborations and startup-focused academic initiatives, and on enhancing the effectiveness of design support for early-stage startups within incubation ecosystems in India. His research interests include design maturity, innovation capability building and the integration of design within entrepreneurial and organisational contexts, connecting academic research with industry and societal impact by translating university-led innovation into real-world solutions.

Professor Desai's teaching and programme leadership emphasise systems thinking, design-led innovation and the strategic role of design in business and society. He has been instrumental in designing interdisciplinary programmes in emerging areas such as design management, entrepreneurship and innovation ecosystems, and actively engages with industry partners to provide live projects, internships and collaborative research that enable students to apply academic work in real-world settings.

# Wellbeing and Human Performance



## Professor Urmila Diwekar

**University of Illinois Chicago**
**United States of America**

Paper title:

**Opt-IVF: A Personalised Optimisation Platform for IVF Using Hybrid Engineering Models and Clinical Validation Across Multicenter Trials**

Professor Urmila Diwekar is President of Vishwamitra Research Institute (USA), a nonprofit organisation she founded to advance multidisciplinary research in optimisation under uncertainty and computer-aided design for applications in energy, environment, sustainability and biomedical engineering. She is also President of Stochastic Research Technologies LLC and Opt-IVF Inc.

Professor Diwekar was a faculty member at Carnegie Mellon University from 1991 to 2002 and Professor at the University of Illinois Chicago from 2002 to 2004. She continues as Visiting/Adjunct Professor, advising students and teaching optimisation, and has been Visiting Professor at the Indian Institute of Technology Bombay since 2020. She has authored more than 225 peer-reviewed papers, 19 book chapters, eight books, two patents and three software packages, and has supervised 49 graduate students and mentored 21 postdoctoral researchers.

Professor Diwekar is a Fellow of the American Institute of Chemical Engineers (AIChE) and the American Institute for Medical and Biological Engineering (AIMBE). Her honours include the AIChE Cecil, Thiele, Clarence Gerhold and Computing in Practice awards, and the 2023 INFORMS Innovative Applications in Analytics Award. Her contributions span process systems engineering, sustainability and reproductive medicine, notably Opt-IVF, a physics-based clinical decision-support system that personalises ovarian stimulation, reducing hormone use and treatment costs.



## Professor Alan Fine

**Dalhousie University**
**Canada**

Paper title:

**Diagnostics for All: An Ultra-Portable Low-Cost System for Multiple Test Types in Minutes on a Single Droplet**

Professor Alan Fine is a tenured full professor in the Department of Physiology & Biophysics at Dalhousie University, Halifax, Nova Scotia, Canada, with cross-appointments as professor in Paediatrics and in Biomedical Engineering. He received an AB with honours in philosophy and biology from Harvard University, and PhD and Veterinary MD degrees from the University of Pennsylvania.

His research investigates synaptic mechanisms of memory, and he develops optical methods for neuroscience and diagnostics, linking fundamental discoveries about how neurons communicate with practical tools for studying brain functions. Earlier in his career, he developed methods for restoring function to the damaged central nervous system through neuronal transplantation. For this pioneering work, he was awarded Dalhousie University's highest academic distinction, University Research Professor, reflecting its importance to neuroscience.

Professor Fine was previously Team Leader and permanent scientific staff at the National Institute for Medical Research in London, UK, and honorary Reader at University College London. He carried out postdoctoral research at the US National Institute of Mental Health in Washington DC, the Weizmann Institute of Science in Rehovot, the University of Cambridge and the Medical Research Council Centre in Cambridge. He has enjoyed fruitful collaboration with outstanding colleagues around the world, and this international experience continues to shape his approach to research and discovery.

# Wellbeing and Human Performance



## Professor Walter Lam

**The University of Hong Kong**
**Hong Kong**

**Paper title:**

**Development and External Validation of GumAI: An AI-Powered mHealth Tool for Gum Disease Screening and Remote Oral Care**

Professor Walter YH Lam is Assistant Dean in Education and Technology Innovation at the Faculty of Dentistry, the University of Hong Kong. He is a tenured Clinical Associate Professor and a registered prosthodontist with fellowships from professional colleges in the United Kingdom, Australia and Hong Kong. He is deeply committed to both undergraduate education and postgraduate specialist training.

With over 100 peer-reviewed publications, his research team has received multiple prestigious awards, including the Gold Medal at Inventions Geneva, the Neal Garrett Clinical Research Prize and the Digital Dentistry Research Prize from the International Association for Dental Research (IADR).

Professor Lam serves on the Science Committee of the World Dental Federation (FDI), contributes to policy development and is President-elect of the Digital Dentistry Research Network of the IADR. He provides advisory services to professional colleges worldwide, is an International Organization for Standardization (ISO) delegate and is an Editorial Board Member of the Journal of Dentistry and the International Dental Journal. Through these roles, he advances equity in oral health and patient care with dedication and humility.



## Doctor Munib Mesinovic

**University of Oxford**
**United Kingdom**

**Paper title:**

**An Open Benchmark for Trustworthy Clinical AI in Intensive Care**

Dr Munib Mesinovic is a postdoctoral researcher in the Department of Engineering Science at the University of Oxford. He completed his MSc in Computer Science and DPhil in Engineering Science at Oxford as a Rhodes Scholar, following a BSc in Electrical Engineering at New York University, where he graduated summa cum laude. He has also undertaken research at the Alan Turing Institute.

His research focuses on machine learning for longitudinal and multimodal health data, with particular interests in survival analysis, graph learning, causal modelling and explainability. He is Principal Investigator of CRITICAL-MM, a project supported by the UK Open Multimodal AI Network that develops infrastructure for evaluating clinical AI across intensive-care datasets. The work combines data harmonisation and reproducible benchmarking with questions about uncertainty, generalisation and the requirements of clinical users.

Dr Mesinovic also leads the machine learning workstream of an NIHR-funded programme developing an NHS kidney-transplant allocation platform, using national registry and electronic health record data. His publications include work in Nature Biomedical Engineering, ACM Computing Surveys, the Journal of the American Medical Informatics Association, Communications Engineering and Communications Medicine.

# Wellbeing and Human Performance



## Professor Tingting Zhu

**University of Oxford**
**United Kingdom**

**Paper title:**
**An Open Benchmark for Trustworthy Clinical AI in Intensive Care**

Professor Tingting Zhu is Associate Professor in AI for Digital Health in the Department of Engineering Science at the University of Oxford, UK. She holds a DPhil in information and biomedical engineering from the University of Oxford (2016), an MSc in Biomedical Engineering from University College London and a BEng (Hons) in Electrical Engineering from the University of Malta.

Her research group, AI for Digital Health, focuses on machine learning for healthcare, developing probabilistic techniques for time-series medical data and methods for understanding complex patient data, with an emphasis on Bayesian inference, deep learning and applications in the developing world. Her current projects include machine learning for telemedicine decision-making, early cancer detection and treatment response, digital twins and treatment effect modelling. She offers DPhil projects in machine learning for healthcare in developed and developing countries.

After her DPhil, she held a Stipendiary Junior Research Fellowship at St Hilda's College, Oxford. She became the Department's first Associate Member of Faculty in 2018 and a full Member of Faculty in 2019 following her Royal Academy of Engineering Research Fellowship. She is a Non-Tutorial Fellow at Kellogg College and a Stipendiary College Lecturer at Mansfield College. Her recent publications address causal graph neural networks for healthcare, fair AI for skin cancer diagnosis and interpretable multimodal models for heart failure risk.