PROTOTYPES FOR **HUMANITY**

2026 Short Papers Platform

17-18 NOVEMBER 2026
AGENDA

Strategic Partner

ICD Investment Corporation of Dubai

TUESDAY
17 NOVEMBER 2026

09:00 - 09:30	Opening Ceremony	DIFC Conference Centre
09:30 - 12:00	Environment, Sustainability and Energy	DIFC Conference Centre
09:30 - 09:40	Opening Remarks and Introduction to Theme	
09:41 - 09:51	AI-Driven Circular Process Safety Transformation: Converting Industrial Wastewater into Ultra-Pure Green Hydrogen with Integrated Carbon Capture Professor Shabib Alrashdi National University of Science and Technology, Oman	
09:52 - 10:02	Light, Not Flame: A Single-Step Photolysis Prototype Turning Waste Methane into Battery-Grade Carbon Nanotubes and Clean Hydrogen Doctor Abdelaziz Gouda University of Waterloo, Canada	
10:03 - 10:13	Activated Bubble Technology for Managing Soil Salinity in Intensive Irrigated Agriculture: From Pot to Farm-Scale Validation in the Jordan Valley Doctor Ala'a Wahbeh National Agricultural Research Center (NARC), Jordan	
10:14 - 10:30	Audience Q&A	
10:30 - 11:00	Coffee Break and Networking	

11:00- 11:10	Community-Led Environmental Health Surveillance Using Upcycled Materials and Mobile Technology in Climate-Vulnerable Bangladesh Doctor Narayana Prasad Brigham and Women's Hospital, United States of America
11:11 - 11:21	Bioinspired Silicon Electrodes for Platinum-Free Green Hydrogen Production: Translating Mitochondrial Nanoarchitecture into Scalable Water Electrolysis Professor Alex Ossa EAFIT University, Colombia
11:22 - 11:32	Ecobricks: A Sustainable Construction Breakthrough – Turning Plastic Waste into High-Strength Building Solutions Professor Fernando Espinoza Duoc UC, Chile
11:33 - 11:43	Parametric CFD Investigation of a Differential Heave Wave Energy Converter for Distributed Coastal Energy Access Mr Brathikan Vijayamohan Mankayarkarasi Kumaraguru College of Technology, India
11:44 - 12:00	Audience Q&A and Closing Remarks
12:00 - 13:00	Lunch Break

13:00 – 15:30	Infrastructures and Cities	DIFC Conference Centre
13:00 - 13:10	Opening Remarks and Introduction to Theme	
13:11 - 13:21	Nature-Integrated Coastal Defences for Resilient Communities Doctor Ravindra Jayaratne University of East London, United Kingdom	
13:22 - 13:32	FONi: A Fertigation Technology for Enhancing Urban Family and Community Food Garden Productivity Professor Budi Indra Setiawan IPB University, Indonesia	
13:33 - 13:43	Automated Urban Road Inspection and Maintenance Planning: A Deep Learning and RPAS Approach for Optimised Budget Allocation Doctor Alex Manuel Sanchez University of Engineering and Technology (UTEC), Peru	
13:44 - 13:54	CreteXtract: From Literature to Auditable Chloride-Diffusion Evidence for Low-Carbon Concrete Professor Moncef Nehdi University of Guelph, Canada	
13:55 - 14:10	Audience Q&A	
14:10 - 14:30	Coffee Break and Networking	
14:31 - 14:41	Conversion of Waste Material into Valuable and Cost-Effective Road Pavement Repair Mix Doctor Lee P Leon The University of the West Indies, Trinidad and Tobago	
14:42 - 14:52	From Waste to Heat-Resilient Buildings: Biochar Brick Prototypes and an AI-Ready Pathway for Low-Carbon Infrastructure Doctor Ahmed Ibrahim Osman Ahmed Canterbury Christ Church University, United Kingdom	
14:53 - 15:03	BURST-PLATE (Blast-Resistant Structural Plate for Public Facilities) Mr Muhammad Nuzulul Furqan Bakrie University, Indonesia	

15:04 - 15:14	Hardened Rescue Occupancy Architecture (HROA): A Resilient Sub-GHz Dual-Layer Telemetry Infrastructure for Structural Collapse Search and Rescue Professor Ajay Gupta Desh Bhagat University, India
15:15 - 15:25	An Open Benchmark for Trustworthy Clinical AI in Intensive Care Doctor Munib Mesinovic University of Oxford, United Kingdom
15:26 - 15:40	Audience Q&A and Closing Remarks
15:40 - 16:00	Coffee Break and Networking

16:00 - 18:30	Mobility and Logistics	DIFC Conference Centre
16:00 - 16:05	Opening Remarks and Introduction to Theme	
16:06 - 16:16	Framework for Unified Mobility-as-a-Service Platform Design Integrating Robotaxi and eVTOL Air Taxi with Public Transit in Dubai Professor Amjad Gawanmeh University of Dubai, United Arab Emirates	
16:17 - 16:27	From Communication Signals to Radar Images: 5G/6G ISAC for Safer Connected Mobility Doctor Neeraj Pandey University College London (UCL), United Kingdom	
16:28 - 16:38	Neuro-Symbolic Swarm Traffic Intelligence (NSSTI): A Self-Evolving Multi-Agent AI System for Predicting and Preventing Urban Traffic Congestion Professor Tarak Nandy University of Malaya, Malaysia	
16:39 - 16:49	Algorithmic Airspace Governance and the Coordination Paradox: Control, Coupling and Resilience in Digital Aviation Systems Doctor Tripti Paul International University of Rabat (UIR), Morocco	
16:50 - 17:05	Audience Q&A	
17:05 - 17:25	Coffee Break and Networking	
17:26 - 17:36	AI/ML-Enhanced Satellite Tracing of Supply Chain Disruptions during Extreme Flooding Doctor Yijing Li King's College London, United Kingdom	
17:37 - 17:47	Vertaxis: Satellite-Enabled Predictive Maintenance for Vertical-Axis Wind Turbines Professor Yilmaz Uygun Constructor University, Germany	

17:48 - 17:58	Human-Centred AI and Blockchain Systems for Sustainable Supply Chains Doctor Irina Neaga University of Wales Trinity Saint David, United Kingdom
17:59 - 18:09	A Regulatory Framework for Low-Emission Urban Freight: Incentivising Fleet Electrification and Digital Integration in Dense Urban Environments Doctor Ashok Chopra Amity University Dubai, United Arab Emirates
18:10 - 18:30	Audience Q&A and Closing Remarks

WEDNESDAY
18 NOVEMBER 2026

09:00–10:15	Open and Speculative	DIFC Conference Centre
09:00 - 09:10	Opening Remarks and Introduction to Theme	
09:11 - 09:21	The Library of Babel Has a Power Bill: A Speculative Reckoning with the Energy Cost of Possible Worlds Mr Tushar Kanade Harvard University, United States of America	
09:22 - 09:32	Satellite-Detected Lake Ice as a Climate Sentinel: A Validated Multi-Year Method for Data-Sparse Lake Regions Professor Marzieh Azarderakhsh New York City College of Technology, United States of America	
09:33 - 09:43	Translating Water Innovation in Public Space: Visible and Invisible Prototypes Professor Patricia Torres-Sánchez Tecnológico de Monterrey, Mexico	
09:44 - 09:54	Sovereign Aesthetics: The Abaya as Living Heritage in the Age of Artificial Intelligence Doctor Christophe Moulherat Sorbonne University Abu Dhabi, United Arab Emirates	
09:55 - 10:05	Cyborg Citizenship: Augmented Cognition, Public Space, and the Next Civic Contract Mr Tushar Kanade Harvard University, United States of America	
10:06 - 10:15	Audience Q&A	
10:15 - 10:30	Coffee Break and Networking	

10:30 – 12:45	Socio-Economic Empowerment, Digital Economies and Future Markets	DIFC Conference Centre
10:30 - 10:35	Opening Remarks and Introduction to Theme	
10:36 - 10:46	HealthBridge AI: A Lightweight, Offline-First Diagnostic Support System for Community Health Workers in Resource-Constrained Settings Professor G K Viju Ahmedabad Institute of Business Management, India	
10:47 - 10:57	Smorphi Imaginary Pro: Robotics Education for Every Learner at USD 1 a Month Mr Nithul Bagathi Singapore University of Technology and Design, Singapore	
10:58 - 11:08	Education Quality and Economic Growth: A New International Measure of Quality of Education Doctor Hammed Oluwaseyi Musibau Adelaide University, Australia	
11:09 - 11:19	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 Doctor Ransford Kwaku Afeadie University of Professional Studies, Ghana	
11:20 - 11:30	Audience Q&A	
11:30 - 11:45	Coffee Break and Networking	
11:46 - 11:56	From Licensing to Lifecycle Compliance: A Legal Readiness Scorecard for Tokenised Digital Asset Markets in Dubai Doctor Vishnu Nair University of Dubai, United Arab Emirates	
11:57 - 12:07	AI-Shield: A Legal-Tech Toolkit and Gamified Framework for Algorithmic Equity in Family Law Professor Yasemin Güllüoğlu Social Sciences University of Ankara, Turkey	

12:08 - 12:18	Federated Graph Learning for Anti-Money Laundering Detection in the UAE: A Privacy-Preserving Framework for Digital Financial Compliance Professor Efstathios Polyzos Zayed University, United Arab Emirates
12:19 - 12:29	Towards Explainable Multimodal Misinformation Detection: Benchmarking Transformer-Based Architectures for Digital Trust Professor David Camacho United Arab Emirates University, United Arab Emirates
12:30 - 12:45	Audience Q&A and Closing Remarks
12:45 - 13:45	Lunch Break

13:45 – 16:00	Autonomous Systems and Advanced Manufacturing	DIFC Conference Centre
13:45 - 13:50	Opening Remarks and Introduction to Theme	
13:51 - 14:01	ORION: Teaching Itself to Teach, a Cognitively Adaptive Physical AI Framework for Industrial Skill Training Doctor Erick Ramírez-Cedillo Tecnológico de Monterrey, Mexico	
14:02 - 14:12	Dragonfly: An Autonomous Robotic System for Chemical-Free Aedes Mosquito Control in Urban Environments Mr Rishivarathan Ilangovan Singapore University of Technology and Design, Singapore	
14:13 - 14:23	An Integrated Material-Process Workflow for Error Mapping and Archival in Robotic Additive Manufacturing of Experimental Materials Doctor Raffi Tchakerian Dubai Institute of Design and Innovation, United Arab Emirates	
14:24 - 14:34	High-Resolution Air Temperature Mapping for Heat-Resilient Cities: A Machine Learning Approach Professor Hamidreza Norouzi City University of New York, United States of America	
14:35 - 14:45	Audience Q&A	
14:45 - 15:00	Coffee Break and Networking	
15:00 - 15:10	Adaptive Robotic Framework for Teleoperated Inspection of Hydroelectric Penstocks Doctor Julio Fajardo Galileo University, Guatemala	
15:11 - 15:21	Development of a Dual-Camera Machine Vision System for Real-Time Capacitor Detection on Waste PCBs Doctor Radon Dhelika University of Indonesia, Indonesia	
15:22 - 15:32	CyberScholar: AI Trust Infrastructure for Education Doctor Anastasia Olga (Olnancy) Tzirides University of Illinois Urbana-Champaign, United States of America	

15:33 - 15:43	Voice as Social Capital: StagePod and the Prototyping of Equitable Communication Training Professor Oliver Niebuhr University of Southern Denmark, Denmark
15:44 - 16:00	Audience Q&A and Closing Remarks
16:00 - 16:15	Coffee Break and Networking

16:15 - 18:30	Wellbeing and Human Performance	DIFC Conference Centre
16:15 - 16:20	Opening Remarks and Introduction to Theme	
16:21 - 16:31	EDA-based Pain Classification Using Machine Learning: The PainDetect Multisite Study Doctor Ikram Brahim Dubai Health Center for Innovation and Technology, United Arab Emirates	
16:32 - 16:42	Predicting High-Risk Pregnancy Using Explainable Machine Learning: A Human-Centred Design Approach from India Professor Harshit Desai MIT Art, Design and Technology University, India	
16:43 - 16:53	Development and External Validation of GumAI: An AI-Powered mHealth Tool for Gum Disease Screening and Remote Oral Care Professor Walter Lam The University of Hong Kong, Hong Kong	
16:54 - 17:04	Audience Q&A	
17:05 - 17:20	Coffee Break and Networking	
17:20 - 17:30	Opt-IVF: A Personalised Optimisation Platform for IVF Using Hybrid Engineering Models and Clinical Validation Across Multicenter Trials Professor Urmila Diwekar University of Illinois Chicago, United States of America	
17:31 - 17:41	VitalSense MIA: An Integrated AI and IoT Early Warning System to Prevent Obstetric Near Miss and Maternal Mortality in Remote Communities Doctor Sixto Enrique Campaña Bastidas National Open and Distance University, Colombia	
17:42 - 17:52	Minivent: A Portable Neonatal Ventilation Device with Real-Time Pressure and Volume Monitoring Professor Consuelo Cano Pontifical Catholic University of Peru, Peru	

17:53 - 18:03	Diagnostics for All: An Ultra-Portable Low-Cost System for Multiple Test Types in Minutes on a Single Droplet Professor Alan Fine Dalhousie University, Canada	
18:04 - 18:19	Audience Q&A and Closing Remarks	
18:30 - 19:00	Awards and Prize-Giving Ceremony	DIFC Conference Centre

We look forward to welcoming you to the
2026 Short Papers Platform.