Wednesday
March 22, 2023

AI in AEC
VIRTUAL CONFERENCE 2023

all times are EET (CET +1)

Ricardo Farinha

STREAM 1

STREAM 2

11:00	**OPENING OF AI IN AEC 2023**
	Chaired by: Dr. **VESA JÄRVINEN** AINS Group / A-Insinöörit
11:15	**KEYNOTE 1** - Can we bring Super Powers to the AEC industry? **RICARDO FARINHA,** CTO, Sweco

12:00	**SESSION 1 - COMPUTATIONAL DESIGN 1**
	Chaired by: **JOONAS HELMINEN**, Sweco
12:00	Design Automation and AI applications for Engineering Structures - from System Selection to Structural Optimization Prof. **XIN ZHAO,** Tongji University, China
12:20	Telescope enclosure optimization using machine learned generative design **LUKA GRADIŠAR,** University of Ljubljana, Slovenia
12:40	Forecast of Injection Grout Volumes in Tunneling using Neural Networks Dr. **JAN BACKHAUS,** Drees & Somme SE, Germany
13:00	Fast Bridge Design: With AI from history to the future **JAKOB GRAVE,** Dresden University of Technology, Germany

SESSION 2 - AEC HACKATHON @ BLOXHUB SESSION
Chaired by: **MATTHEW JACKSON**

13:20	
13:20	

13:40	**SESSION 3 - COMPUTATIONAL DESIGN 2**
	Chaired by: **JANNE LIUTTU**, Ramboll
13:40	The Use of AI to Automate Linear Structures Design Processes **RAMIZ MOHAREB & MICHAEL FREY,** Konstruktionsgruppe Bauen, Germany
14:00	Predicting Wind Flow in the Built Environment with Artificial Neural Networks Dr. **SAMI BIDIER,** str.ucture GmbH, Germany
14:20	Rethinking programming of structural engineering process **MATIAS HIRVIKOSKI & SONJA OKSANEN,** AINS Group, Finland
14:40	Machine Learning and Evolutionary Optimization in Bridge Engineering **FELIPE BANDEIRA DE MELO MORAES,** Rambøll, Denmark

SESSION 4 - SMART BUILDINGS AND CITIES 1
Chaired by: **PIETI MARJAVAARA**, AINS Group / A-Insinöörit

Advanced Building Control System using autonomous and semi-autonomous Approaches
AHMED ZAKZOUK, Dresden University of Technology, Germany

An authoring workflow of Digital Twin from BIM aiming information management of existing buildings
Prof. **CARLO BIAGINI** & Dr. **ANDREA BONGINI,** University of Florence, Italy

Continued Surveillance of Automated Monitoring within the Construction Domain
KYLE MORMAN, University of Florida, United States

15:00	
15:00	

15:20	**SESSION 5 - CONCEPTUAL DESIGN**
	Chaired by: **SERGEJ VON BAGH**, BST Arkkitehdit
15:20	Exploring AI in Architectural Practice **CAOIMHE LOFTUS,** Architect and Associate at CallisonRTKL, United Kingdom
15:40	A Model Generative Approach to Synthesize Conditional House Layout Dr. **KOUROSH NADERI & JOONAS VIERIJÄRVI,** MagiCAD, Finland
16:00	Performance-driven Conceptual Generative Design Exploration of a Pedestrian Bridge **SOPHIA KUHN & VERA BALMER,** ETH Zurich, Switzerland
16:20	Navigating the Geospatial Data Marketplace: How to Select the Right Data and Leverage AI for Actionable Insights **ADAM KERSNOWSKI ,** Airworks, United States
16:40	A Learning Approach for Building Design Evaluation Dr. **JIELIANG (RODGER) LUO & Dr. ADAM GAIER,** Autodesk, United States
17:20	**KEYNOTE SESSION**
	Chaired by: **HENRI PITKÄNEN**, Trimble
17:20	**KEYNOTE 2** - Levering AI & ML in immersive technology **JOACHIM DEKKER,** VP of Sales EMEA & APAC, Varjo Technologies
17:50	**KEYNOTE 3** - **MARC GOLDMAN,** Director of AEC Industry Solutions, Esri

SESSION 6 - SUSTAINABLE DEVELOPMENT
Chaired by: **FREEK MATHEIJ**, Arcadis

Increasing Efficiency of Pre-Construction Protected Species Monitoring through Machine Learning
MATT CARNEY, YUE ZHAO & BELINDA KRATER, Arcadis, United States

Evaluation of modernistic buildings in Poznan in the angle of heritage protection with the use of Dominance-based Rough Set Approach
Dr. **AGNIESZKA RUMIEŻ** & Dr. **BARBARA ŚWIT-JANKOWSKA,** Poznan University of Technology, Poland

AI based circular AEC workflow for sustainable structural design
Dr. **KOSALA BANDARA,** Autodesk, United Kingdom

Machine Learning Predictions for Repurposing Decommissioned Wind Turbine Rotor Blades as Oriented Strand Boards in the United States of America by 2050
Dr. **PATRICIA KIO,** Fitchburg State University, USA

Joachim Dekker

Marc Goldman

Thursday 23rd March

AI in AEC
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STREAM 1

Ian Smith

11:00 SESSION 7 - UNIVERSITY SESSION
Chaired by: **HENRI PITKÄNEN**, Trimble

11:00	**KEYNOTE 4** - Widening the scope of applications of AI for AEC **IAN SMITH**, Director of the Georg Nemetschek Institute, Technical University of Munich
11:30	Challenges with limited data for Machine Learning – Learning in the process towards Machine Learning Prof. **EILIF HJELSETH**, Norwegian University of Science and Technology (NTNU), Norway
11:50	Data-based Learning in Construction Value Chain: Revealing Challenges and Drivers Prof. **ANTTI PELTOKORPI**, Aalto University, Finland
12.10	Panel discussion with the session speakers

13:20 SESSION 8 - SMART BUILDING AND CITIES 2
Chaired by: **JANNE LIUTTU**, Ramboll

13:20	Large Language Models in the AEC sector: An approach for building information management Dr. **RAMÓN RUEDA**, APOGEA, Spain
13:40	Making AR economically feasible for industrial environments through photorealistic digital twins and AI **FRANK RUST**, Framence, Germany
14:00	Potential uses of IoT-DT pipeline for value management of real assets: recommendations for investors and construction clients. **KATJA RODIONOVA**, Sitowise / LAB UAS, Finland

14:40 SESSION 9 - PANEL DISCUSSION
AI FOR SUSTAINABILITY: CAN AI HELP ACHIEVE ENVIRONMENTAL SUSTAINABILITY?
Moderated by: Dr. **MIIMU AIRAKSINEN**, SRV

16:00 SESSION 10 - DEMOS
Chaired by: **FREEK MATHEIJ**, Arcadis

16:00	AI powered risk management for construction projects **MIKAELI LANGINVAINIO & Dr. SAMI KÄRNÄ**, Inclus, Finland
16:20	A Digital Assistant for Building Production **RICHARD HARPHAM**, Slate Technologies, United States

17:00 SESSION 11 - IMPACTFUL AI
Chaired by: Dr. **VESA JÄRVINEN** AINS Group / A-Insinöörit

17:00	The role of AEC professionals in the age of AI Dr. **MEHDI NOURBAKHSH**, YegaTech, United States
17:20	How AI is disrupting scientific computing in the built environment - the view from Arup Dr. **RAMASESHAN KANNAN,** Arup, United Kingdom

17:40 CLOSING SESSION
Chaired by: **FREEK MATHEIJ**, Arcadis

17:40	**KEYNOTE 5** - **RENAUD DANHAIVE,** Senior Machine Learning Engineer, Spacemaker by Autodesk
18:10	European Innovation Council EIC **FRANC MOUWEN**, European Innovation Council, Belgium
18:20	Closing Words Dr. **VESA JÄRVINEN,** AINS Group / A-Insinöörit

Renaud Danhaive

PANEL
AI for Sustainability:
Can AI Help Achieve Environmental Sustainability?

LIISA JÄÄTVUORI
AINS Group, Chief Sustainability and Quality Officer

RIINA KÄNKÄNEN
Ramboll, Head of Sustainability

MIA ANDELIN
SWECO, CSO

MODERATED BY:
MIIMU AIRAKSINEN
Senior Vice President, Development at **SRV GROUP**