# Wednesday
**March 22, 2023**

**Virtual Conference 2023**

**Partners Supported by Organizer**

**Keynote 1 - Can we bring Super Powers to the AEC industry?**
Ricardo Farinha, CTO, Sweco

**Session 1 - Computational Design 1**
Chaired by: Joonas Helminen, Sweco

- Design Automation and AI applications for Engineering Structures - from System Selection to Structural Optimization
  - Prof. Xin Zhao, Tongji University, China

- Telescope enclosure optimization using machine learned generative design
  - Lukas Gradisar, University of Ljubljana, Slovenia

- Forecast of Injection Great Volumes in Tunneling using Neural Networks
  - Dr. Jan Bäckhaus, Drees & Sommer SE, Germany

- 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

**Session 3 - Computational Design 2**
Chaired by: Janne Liutti, Ramboll

- The Use of AI to Automate Linear Structures Design Processes
  - Raniz Mohareb & Michael Frey, Konstruktionsgruppe Bau, Germany

- Predicting Wind Flow in the Built Environment with Artificial Neural Networks
  - Dr. Sami Bider, structure GmbH, Germany

- Rethinking programming of structural engineering process
  - Matias Hirvonsalo & Sonja Oksanen, AINS Group, Finland

- Machine Learning and Evolutionary Optimization in Bridge Engineering
  - Felipe Bandeira de Melo Maiores, Ramboll, Denmark

**Session 4 - Smart Buildings and Cities 1**
Chaired by: Pieti Marjavara, 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

**Session 5 - Conceptual Design**
Chaired by: Sergeij von Bagh, BST Arkitekter

- Exploring AI in Architectural Practice
  - Cadmium Loftus, Architect and Associate at CallisonRTKL, United Kingdom

- A Model Generative Approach to Synthesize Conditional House Layout
  - Dr. Kourosh Naderi & Joonas Vierijärvi, MagiCAD, Finland

- Performance-driven Conceptual Generative Design Exploration of a Pedestrian Bridge
  - Sophia Kuhn & Vera Balmer, ETH Zurich, Switzerland

- Navigating the Geospatial Data Marketplace: How to Select the Right Data and Leverage AI for Actionable Insights
  - Adam Kersnowski, Airworks, United States

- A Learning Approach for Building Design Evaluation
  - Dr. Joeliang (Rodger) Luo & Dr. Adam Gaiser, Autodesk, United States

**Session 6 - Sustainable Development**
Chaired by: Freek Mathijs, 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 Rumięś & Dr. Barbara Świt-Jankowska, Poznan University of Technology, Poland

- AI based circular AEC workflow for sustainable structural design
  - 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 Kiö, Fitchburg State University, USA

**Keynote Session**
Chaired by: Henri Pitkänen, Trimble

- Keynote 2 - Levering AI & ML in immersive technology
  - Joachim Dekker, VP of Sales EMEA & APAC, Varjo Technologies

- Keynote 3 - Marc Goldman, Director of AEC Industry Solutions, Esri
Thursday
23rd March

STREAM 1

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. ELIF KÜLTSETH, 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, APOGA, 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: 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: VESA JÄRVINEN, AINS Group / A-insinöörit

17:08 The role of AEC professionals in the age of AI
Dr. MEHDI NOURBAKHSH, YegalTech, 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 Vice President, Development at SRV

18:00 European Innovation Council EIC
FRANC MOUWEN, European Innovation Council, Belgium

18:20 Closing Words
Dr. VESA JÄRVINEN, AINS Group / A-insinöörit

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

LIISA JÄÄTVUORI
AINS Group, Chief Sustainability and Quality Officer

MIA ANDELIN
SWECO, CSO

RIINA KÄNKÄNEN
Ramboll, Head of Sustainability

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

Renaud Danhaive