Wednesday March 23, 2022

AI in AEC
VIRTUAL CONFERENCE 2022

all times are EET (CET +1)
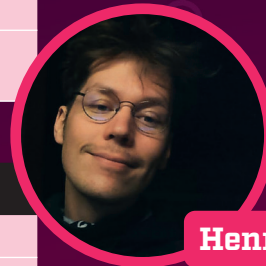
STREAM 1

OPENING OF AI IN AEC 2022
Chaired by: Vesa Järvinen, AINS Group / A-Insinöörit, Finland

11:00 — OPENING OF THE CONFERENCE
VESA JÄRVINEN, AINS GROUP / A-INSINÖÖRIT, FINLAND

Henri Pitkänen

KEYNOTE SESSION
Chaired by: Vesa Järvinen, AINS Group / A-Insinöörit, Finland

11:15 — KEYNOTE 1: HENRI PITKÄNEN, TRIMBLE, FINLAND
Collaborative Design Knowledge Transformation

STREAM 2

COMPUTATIONAL DESIGN 1
Chaired by: Joonas Helminen, Sweco, Finland

12:00

12:20 — Architecture for Complexity: Emergence of Ai and Big Data Driven Workflows for AEC
ALISA ANDRASEK, AIARCH, RMIT, AUSTRALIA

12:40 — Algorithm-aided Design of Railway Induced Vibration
JUKKA MÄENPÄÄ, AINS GROUP / A-INSINÖÖRIT, FINLAND

13:00 — Artificial Intelligence Augmented Design - What You Prescribe Is What You Get
MICHAEL KRAUS, ETH ZURICH, SWITZERLAND

13:20 — Kruunuvuori Bridge: Holistic Computational Design for Fabrication of a Large-scale Bridge.
AUGUSTIN CEILLIER, RAMBOLL, FINLAND

AUTOMATED DOCUMENT PROCESSING
Chaired by: Janne Liuttu, Ramboll, Finland

Multilevel Decomposition Model for Engineering Structural Design Automation
XIN ZHAO, TONGJI UNIVERSITY, CHINA

Digital Image Processing of Drawings for Automated Quality Check
ASHISH CHIB & ABHINAV SEHRAWAT, RAMBOLL, INDIA

BIM-based Building Permit Process in Estonia
CHRISTOPHER-ROBIN RAITVIIR, MINISTRY OF ECONOMIC AFFAIRS AND COMMUNICATIONS OF ESTONIA

Intelligent Document Processing in Construction
JO CIJNSMANS, METAMAZE, BELGIUM

COMPUTATIONAL DESIGN 2
Chaired by: Ricardo Farinha, Sweco, Finland

14:00 — Machine Learning Augmented Methods for Automated Design in MEP
PAULI KEINONEN & KOUROSH NADERI, MAGICAD GROUP, FINLAND

14:20 — Pile Drive Predictions with Artificial Neural Networks
MARCEL SLOOTWEG, VIKTOR, THE NETHERLANDS

14:40 — Smart Design and Modelling of Steel Connections
SAMIR EL MOURABIT, SWECO, SWEDEN

15:00 — The approach to the automatic diagnosis of building structures using deep learning methodology
HYUNKYU SHIN, HANYANG UNIVERSITY, REPUBLIC OF KOREA

AI ENABLERS
Chaired by: Pieti Marjavaara, AINS Group / A-Insinöörit, Finland

Reference Process for the Transformation of Unstructured Object Catalogues into Classification Hierarchies
SVEN ZENTGRAF, RUHR-UNIVERSITY BOCHUM, GERMANY

ELISE: Connecting AI Business and AI Research in Europe
DIEDERICK STELLINGSMA, SPINVERSE, FINLAND

Situational awareness as a basis for AI solutions in construction
HEIKKI HALTTULA, AIFORSITE, FINLAND

DEMO BY RAMBOLL   STREAM 1

SMART BUILDINGS AND CITIES 1
Chaired by: Vesa Järvinen, AINS Group / A-Insinöörit, Finland

16:00 — Bringing Digital Twins to life with AI
ADRIAN MERKEL & FRANK RUST, FRAMENCE GMBH, GERMANY

16:20 — Aug·e
MICHIEL DHONT, AUG·E, BELGIUM

16:40

17:00

AUTONOMOUS MONITORING
Chaired by: Freek Matheij, Arcadis, USA

Application of Computer Vision for the Efficient Choice of End-of-life Scenario for Building's Structural Elements
ALEKSEI KONDRATENKO & MUSSIE AMAHA BIRHANE, POLITECNICO DI MILANO, ITALY

Using Deep Learning for Instance Segmentation of Indoor Fire Safety Equipment in Images
ANGELINA AZIZ, RUHR-UNIVERSITY BOCHUM, GERMANY

Mapping and Classification of Landscape and Water Elements on Aerial and Satellite Imagery Using Deep Learning
ROLAND DIJKHUIZEN, ARCADIS, THE NETHERLANDS

Construction Robotics: Spot Sniffing out the Data
DAVID BURCZYK, TRIMBLE, USA

Alexandre Vallières

KEYNOTE SESSION
Chaired by: Ricardo Farinha, Sweco, Finland

17:30 — KEYNOTE 2 ALEXANDRE VALLIÈRES, BENTLEY SYSTEMS, CANADA
The AI-powered digital twin

18:00 — KEYNOTE 3 SALLA ECKHARDT, MICROSOFT, USA
Digital Building Lifecycle – Taking the Long View

Salla Eckhardt

GOLD PARTNER **RAMBOLL**   PARTNERS **A-INSINÖÖRIT** **SWECO** **ARCADIS**   ORGANIZER **ril**

Thursday March 24, 2022

AI in AEC
VIRTUAL CONFERENCE 2022

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STREAM 1

Janne Liuttu

KEYNOTE SESSION
Chaired by: Ricardo Farinha, Sweco, Finland

| 11:00 | **KEYNOTE 4** JANNE LIUTTU, RAMBOLL, FINLAND
 The Next Normal in AEC |

STREAM 2

SUSTAINABLE DEVELOPMENT 1
- IN PARTNERSHIP WITH RAMBOLL
Chaired by: Janne Liuttu, Ramboll, Finland

CONSTRUCTION MANAGEMENT
Chaired by: Vesa Järvinen, AINS Group / A-Insinöörit, Finland

	SUSTAINABLE DEVELOPMENT 1	CONSTRUCTION MANAGEMENT
11:40		Digital programme Management: Real-world Machine Learning Applications ALEJANDRO LOPEZ & MATTHEW HILL, ATKINS, UNITED ARAB EMIRATES
12:00	Multi-disciplinary Decision Making in Conceptual Design Phases using Computational Design, Building Performance Simulation, and Surrogate Modelling NATASHA CATUNDA, GRUNER AG, SWITZERLAND	Knowledge Graphs in Construction SEPPO TÖRMÄ, VISUALYNK & METROPOLIA, FINLAND
12:20	A Digital Twin Prototypes System to Automatize Sustainability Criteria Evaluation in Public Procurement SILVIA MESCHINI, POLITECNICO DI MILANO, ITALY	A BIM-and-database-based 3D Configurator with Automatic Contract Amendment Generation FRANCOIS DENIS, CEDRIC DRIESEN & ARNAUD CANDAELE, BELGIAN BUILDING RESEARCH INSTITUTE, BELGIUM
12:40	Digitalizing Existing Buildings: Moving Towards Circularity using Big Data and Machine Learning DEEPIKA RAGHU, ETH ZURICH, SWITZERLAND	AUTO.pilots - The Work in Progress Detection RAPHAEL HIPPE & JANOSCH DLOUHY, TAKT.ING GMBH, GERMANY

SUSTAINABLE DEVELOPMENT 2
Chaired by: Henri Pitkänen, Trimble, Finland

SMART BUILDINGS AND CITIES 2
Chaired by: Michiel Dhont, Aug·e, Belgium

	SUSTAINABLE DEVELOPMENT 2	SMART BUILDINGS AND CITIES 2
13:40	Data Driven Sustainable Building Design RUTVIK DESHPANDE, DIGITAL BLUE FOAM, INDIA	Occupancy-Oriented Passive Digital Twin to Support the Decision-Making Process of Facility Managers LAURA PELLEGRINI, POLITECNICO DI MILANO, ITALY
14:00	The Generative, Industry-proven Conceptual Design of Timber Structures Using AI ALEKSEI KONDRATENKO & VAN HOI DANG, POLITECNICO DI MILANO, ITALY	Evaluating the Readiness of IoT for Commercial Deployment in Construction AARON COSTIN, UNIVERSITY OF FLORIDA, USA
14:20	The Application of AI and ML to Predict Urban Thermal Comfort of Cities NASIM ESLAMIRAD, FINEST CENTRE FOR SMART CITIES, TALLINN UNIVERSITY OF TECHNOLOGY, ESTONIA	How Operators of Commercial Buildings Can Communicate with AI AHMET KÖSE, R8TECH, ESTONIA
14:40		Predicting Residential Property Prices with Machine Learning Models JANI NEVALAINEN & SONJA OKSANEN, AINS GROUP / A-INSINÖÖRIT, FINLAND

KEYNOTE SESSION
Chaired by: Freek Matheij, Arcadis, USA

| 15:20 | **KEYNOTE 5** MEHDI NOURBAKHSH, YEGATECH, USA
 Becoming an AI Leader in AEC |

Mehdi Nourbakhsh

C-SUITE PANEL DISCUSSION

| 16:10 | The use of AI in the AEC industry: How to reach the benefits of AI?
 Panelists:
 CHRIS BELL, TRIMBLE, USA
 DAVID HUNTER, SWECO, SWEDEN
 JYRKI KEINÄNEN, AINS GROUP / A-INSINÖÖRIT, FINLAND
 BRAM MOMMERS, ARCADIS, NETHERLANDS

 Moderated by:
 SUSANNE KNORR, ARCADIS, UK
 TEEMU LEHTINEN, KIRAHUB, FINLAND |
| 17:05 | Closing of AI in AEC 2022
 VESA JÄRVINEN, AINS GROUP / A-INSINÖÖRIT, FINLAND |

Bram Mommers
David Hunter   **Chris Bell**   **Jyrki Keinänen**
Susanne Knorr   **Teemu Lehtinen**