



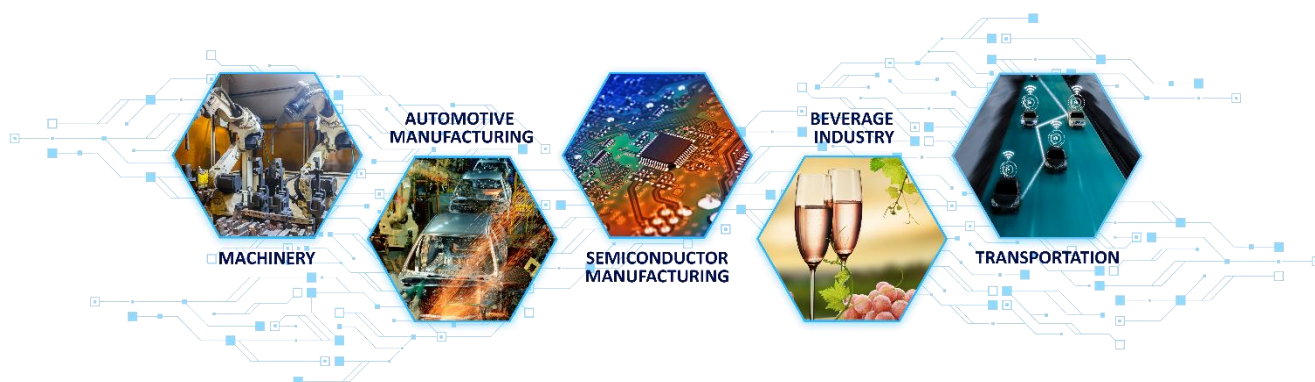
AI for Digitising Industry Webinar from AI4DI: AI for Semiconductor and Industrial Machinery Industries

INVITATION



AI for Semiconductor and Industrial Machinery Industries

26th of March 2021, 09:00-11:30 CET - Online



Artificial Intelligence (AI) technologies are opening opportunities for semiconductor companies to enhance the industry supply chains and improve efficiency while cutting costs in the manufacturing process. Semiconductor manufacturing companies apply deep learning (DL), and machine learning (ML) approaches to images to enhance the detection of defects and optimise the back-end processes.

Tier 1 foundries use AI tools to link equipment know-how and manufacturing statistics in managing extensive Fault Detection (FD) data. AI facilitates the real-time collection and monitoring of large amounts of processing data, then alerts system managers of any hardware failures or other manufacturing anomalies. Semiconductor manufacturing facilities combine automation with intelligence by processing the information from equipment status and manufacturing process statistics to on-site environmental data collected through sensors and processing it in real-time in edge computing facilities and integrated with the Manufacturing Execution Systems (MES).

The industrial machinery stakeholders are restructuring their business models to provide this new technology while end-users work on their machinery's operation-specific use cases. In the industrial machinery sector, AI is applied for optimising manual tasks, and new solutions are integrated with ML to support applications for data collection, aggregation, processing, and predictive maintenance. AI becomes an integral part of manufacturing and automation across engineering, operations, and maintenance. The main applications that integrate AI techniques and methods in the industrial machinery sector are human-machine interface (HMI) optimisation, maintenance (predictive and prescriptive), quality control, energy management, safety, motion planning, cybersecurity, operational simulation, and optimisation.

AI enters the control architecture of many machines and is part of the (MES), providing new capabilities for the manufacturing processes. AI methods enhance programmable logic controllers' capabilities (PLCs). The AI techniques are integrated into engineering and programming tools with embedded natural language processing (NLP) autocorrect features or by automatically suggesting code and changing programming controllers. New AI circuits are used in the industrial controllers and become an integral part of IO modules, sensors, and actuators. The AI is present in the different manufacturing process layers integrating AI-centric hardware/software solutions using powerful edge devices.

The AI4DI Webinar no2: AI for Semiconductor and Industrial Machinery Industries is designed to present the AI techniques and methods applied to different applications in the semiconductor industry and industrial machinery developed by AI4DI project partners. The webinar includes a keynote speech from Prof. Wolfgang Ecker, Infineon, Germany.



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PROGRAMME

Virtual Coffee in the Lobby ONLINE EVENT

09:00 - 09:05	AI for Digitizing Industry Webinar Opening <i>Welcome and Introduction</i> by Cristina De Luca, Infineon, Germany
09:05 - 09:15	<i>Challenges and opportunities for AI in semiconductor and machinery industries</i> – Cristina De Luca, Infineon, Germany, and Reiner John, AVL List, Austria
09:15 - 10:00	AI Applications in Industrial Machinery <i>AI developments in industrial machinery</i> – Francesco Papariello, STMicroelectronics, Italy <i>Wood machinery with innovative HMI interface</i> – Lucrezia Maria Quarato, SCM GROUP, Italy <i>Smart Robot</i> – Janis Arents and Modris Greitans, EDI, Latvia Session moderator: Giulio Urlini, STMicroelectronics, Italy
10:00 - 10:15	Keynote <i>AI and More</i> – Prof. Wolfgang Ecker, Infineon, Germany
10:15 - 10:20	Coffee break – 5 mins
10:20 - 11:25	<i>AI developments in semiconductor industry</i> – Bernhard Lippmann, Infineon, Germany <i>AI based FMEA assistant</i> – Martin Mischitz, Infineon, Austria <i>AI based 3D visual inspection for quality assurance</i> – Altti Torkkeli and Kamil Marwat, MURATA, Dmitry Morits, VTT, Finland <i>Efficient Deep Learning Approaches for Fault Detection in the Semiconductor Industry</i> – Frédéric Pétrot, TIMA laboratory, Univ. Grenoble Alpes, France <i>A fully automated process for semiconductor technology analysis through SEM cross-sections</i> – Matthias Ludwig, Infineon, Germany Session moderator: Bernhard Lippmann, Infineon, Germany
11:25 - 11:30	Closing remarks

The webinar is organised by [ECSEL AI4DI](#) project in cooperation with [ECSEL Industry4.E Lighthouse](#) initiative.

PRACTICAL INFO



Please register in advance for the AI4DI Webinar no2 for the 26th of March 2021 9:00 -11:30 AM CET at:

<https://attendee.gotowebinar.com/register/5832280677975661584>

After registering, you will receive a confirmation email containing information about joining the webinar.

We are looking forward to MEETING you ONLINE!



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