

The Disruptive Power of Machine Learning and IoT in Automation Industry

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Abstract

In the past decades the automation industry was evolving at modest pace, mainly driven by innovations in mechanical design and utilizing basic principles from physics or chemistry. What was already known was continuously improved and aspects like requirements for environmental and human protection increased over the years and were more and more formalized leading i.e. to complex procedures for safety designs. The innovations of the IT world which continuously gained speed especially over the last decade were taken over rather reluctantly. But recent trends show a growing push of IT technologies into every field of industrial application, frequently named as industry 4.0 or 4th industrial revolution. We will look at opportunities and threads created by the technological changes, touch preconditions for success and pitfalls for failure. Analyzing the past trends of both IT and industrial automation will allow us for some astonishing predictions for the next decade.

Bio Note

Attila Bilgic studied physics at the University of Dortmund, where he received the Dipl.-Phys. degree on theoretical solid-state physics and the Dr.-Ing. degree on microwave engineering in 1996 and 2000, respectively. Afterwards, he started his career in industry with Infineon Technologies AG, working on the 3rd generation mobile communication system UMTS. From 2004 on, he was with the Corporate Software Group of Infineon Technologies where he was responsible for the software architecture definition of the application and protocol layers of the Infineon multimedia platforms for mobile terminals.

In April 2007 he took over a position as Professor at the Ruhr-University-Bochum in order to foster the industrial and academic relationship to the benefit of both sides. His research interests were focused on integrated systems for multi-standard wireless communications with a strong focus also on the corresponding software and on embedded systems in general where hardware and software co-design is essential.

In autumn 2009 he joined the KROHNE group first as general manager for the headquarter and CTO, being responsible for the technology strategy and R&D operations. The technological scope of the KROHNE group has been significantly enhanced and new R&D sites were founded at the university of Bochum/Germany and in Timisoara/Romania. He did major contributions to advance the IoT in the automation community. Since 2017 he is also member of the KROHNE group holding executive management.

He is a member of the DPG, IEEE and member of the executive board of the VDI/VDE-Society Measurement and Automation Control (GMA).