Universität St.Gallen

Computer Science Insights @HSG - School of Computer Science

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When Business Processes meet the Internet of Things: Will they have a happy future?

Ronny Seiger

Business Process Management (BPM) research and development focused its attention on automating and optimizing digital processes of enterprises over the past decades. With the advent of the Internet of Things (IoT), these digital processes might also be enabled to interact with the physical world, including smart devices and humans--all together forming smart Cyber-physical Systems (CPS). In this talk, we will have a look at software engineering-focused research projects to adopt BPM technologies for developing CPS. We will discuss the integration of large numbers of sensors, actuators including robots, and humans into CPS processes. We also investigate how to make these processes resilient against external interruptions and failures and how to apply process mining in this context. Industry-driven use cases from the domains of smart manufacturing, smart healthcare, and smart homes will be used to showcase the new concepts and technologies. Throughout the talk, we will discuss challenges and mutual benefits of bringing the worlds of BPM and IoT closer together.

Ronny Seiger received his PhD in computer science from Technische Universität Dresden, Germany in 2018. Since 2022 he is an Assistant Professor for Computer Science with focus on Software Engineering Methods and Techniques at the University of St.Gallen. His experience includes research and industry projects on software engineering and software architectures, Business Process Management (BPM) technologies, Cyber-physical Systems (CPS) and Internet of Things (IoT), as well as robotics and distributed systems. His main research is at the intersection of BPM, software engineering, and IoT with a focus on applying BPM technologies for analyzing and automating processes in Cyber-physical systems.

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