学术报告会

时间：2024年4月2日 14:00
地点：电信群楼2-412会议室

IoT-based Smart Manufacturing

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摘要：

Traditional industries are confronted with high labor costs, large carbon emissions, a low level of intelligence, low production efficiency, unstable quality control, safety, etc. To improve their competitiveness manufacturers are exploring key technologies, such as Artificial Intelligence & Machine Learning (AI & ML), Big Data Analytics, Digital Twins, Cloud Computing, etc.) We will focus on how the Industrial Internet of Things (IoT) supports the above key technologies. IoT in smart manufacturing is a scenario where manufacturing resources are converted into smart things or smart manufacturing objects (SMOs). This scenario uncovers a paradigm known as IoT-based smart manufacturing. SMOs are able to sense, interconnect and interact with each other automatically to carry out manufacturing logistics. Data collected by smart sensors can provide the production process with data analytics and intelligent decision-making. Integration of IoT would result in a network of machine-to-machine, human-to-machine interactions. This would result in efficiency in resource sharing in the manufacturing process.

简介：

Gerhardus Petrus Hancke，南非普利托利亚大学（University of Pretoria，UP）名誉教授、研究员，普利托利亚大学工程博士，斯泰伦博斯大学（University of Stellenbosch）学士和硕士。主要研究方向为工业无线传感器网络领域，出版了关于工业无线传感器网络的第一本教材《工业无线传感器网络：应用、协议与标准》，被IEEE授予"为无线传感器网络的贡献"，IEEE会士。2009年和2012年分别在IEEE Transactions on Industrial Electronics(TIE)和IEEE Transactions on Industrial Informatics(TII)发起了第一期工业无线传感器网络专题，获得2012年TII最佳论文奖。曾担任TII、TIE和IEEE Access期刊的副主编和客座编辑，自2023年起，担任TII期刊的主编。