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   Nota di contenuto   Preface -- Energy Profile Prediction of Milling Processes Using Machine
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                        localization of an underwater docking station -- Deployment
                        architecture for the local delivery of ML-Models to the industrial shop
                        floor -- Deep Learning in Resource and Data Constrained Edge
                        Computing Systems -- Prediction of Batch Processes Runtime Applying
                        Dynamic Time Warping and Survival Analysis -- Proposal for
                        requirements on industrial AI solutions -- Information modeling and
                        knowledge extraction for machine learning applications in industrial
                        production systems -- Explanation Framework for Intrusion Detection
                        -- Automatic Generation of Improvement Suggestions for Legacy, PLC
                        Controlled Manufacturing Equipment Utilizing Machine Learning --
                        Hardening Deep Neural Networks in Condition Monitoring Systems
                        against Adversarial Example Attacks -- First Approaches to
                        Automatically Diagnose and Reconfigure Hybrid Cyber-Physical
                        Systems -- Machine learning for reconstruction of highly porous
                        structures from FIB-SEM nano-tomographic data.

   Sommario/riassunto   This open access proceedings presents new approaches to Machine
                        Learning for Cyber Physical Systems, experiences and visions. It
                        contains selected papers from the fifth international Conference

ML4CPS – Machine Learning for Cyber Physical Systems, which was held in Berlin, March 12-13, 2020. Cyber Physical Systems are characterized by their ability to adapt and to learn: They analyze their environment and, based on observations, they learn patterns, correlations and predictive models. Typical applications are condition monitoring, predictive maintenance, image processing and diagnosis. Machine Learning is the key technology for these developments. The Editors Prof. Dr.-Ing. Jürgen Beyerer is Professor at the Department for Interactive Real-Time Systems at the Karlsruhe Institute of Technology. In addition he manages the Fraunhofer Institute of Optronics, System Technologies and Image Exploitation IOSB. Dr. Alexander Maier is head of group Machine Learning at Fraunhofer IOSB-INA. His focus is on the development of algorithms for big data applications in Cyber-Physical Systems (diagnostics, optimization, predictive maintenance) and the transfer of research results to industry. Prof. Oliver Niggemann got his doctorate in 2001 at the University of Paderborn with the topic "Visual Data Mining of Graph-Based Data". He then worked for almost 8 years in leading positions in the industry. From 2008-2019 he held a professorship at the Institute for Industrial Information Technologies (inIT) in Lemgo/Germany. Until 2019 Prof. Niggemann was also deputy head of the Fraunhofer IOSB-INA, which works in industrial automation. On April 1, 2019 Prof. Niggemann took over the university professorship "Computer Science in Mechanical Engineering" at the Helmut-Schmidt-University in Hamburg / Germany. There he does research at the Institute for Automation Technology IfA in the field of artificial intelligence and machine learning for cyber-physical systems.