

Publications for COGNITWIN Project (GA Number 870130)

Type	Title	Authors	Title of the Journal/Proc./Book	DOI	Link	Year
Publication in Conference proceedings/Workshop	A Hybrid Digital Twin for Optimal Si-Production	Kasper Linnestad, Kjetil Hildal, Lars K. Jakobsson, Solve Eidnes, Vemund Tjessem, Erlend L. Bjørnstad, Stein Wasbø	Proceedings of the Silicon for the Chemical & Solar Industry XVI	10.2139/ssrn.4121131	Link	2022
Chapter in a Book	Data-Driven Artificial Intelligence and Predictive Analytics for the Maintenance of Industrial Machinery with Hybrid and Cognitive Digital Twins	Perin Ünal, Özlem Albayrak, Moez Jomáa, Arne J. Berre	Technologies and Applications for Big Data Value	10.1007/978-3-030-78307-5	https://link.springer.com/chapter/10.1007/978-3-030-78307-5_14	2022
Publication in Conference proceedings/Workshop	On-line estimation of circulating fluidized bed boiler fuel composition	Enso Ikonen; Markus Neuvonen; Istvan Selek; Mikko Salo; Mika Liukkonen	2022 UKACC 13th International Conference on Control (CONTROL)	10.1109/control55989.2022.9781460	https://doi.org/10.1109/control55989.2022.9781460	2022
Publication in Conference proceedings/Workshop	Asset Administration Shell Generation and Usage for Digital Twins: A Case Study for Non-destructive Testing.	Fatih Yallıç, Özlem Albayrak, Perin Ünal	3rd International Conference on Innovative Intelligent Industrial Production and Logistics	10.5220/0011561400003329	Link	2022
Article in Journal	Impact on Inference Model Performance for ML Tasks Using Real-Life Training Data and Synthetic Training Data from GANs	Ulrike Faltings; Tobias Bettinger; Swen Barth; Michael Schäfer	Information	10.3390/info13010009	https://dx.doi.org/10.3390/info13010009	2022
Publication in Conference proceedings/Workshop	A Comparison of State-of-Art Machine Learning Algorithms on Fault Indication and Remaining Useful Life Determination by Telemetry Data	Aras Ünal, Ali Kaleli, Emre Ummak, Özlem Albayrak	The 8th International Conference on Future Internet of Things and Cloud	10.1109/ficloud49777.2021.00019	https://ieeexplore.ieee.org/document/9590401	2021
Article in Journal	Estimating Fuel Characteristics from Simulated Circulating Fluidized Bed Furnace Data	Markus Neuvonen, Istvan Selek, Enso Ikonen	2021 9th International Conference on Systems and Control (ICSC)	10.1109/icsc50472.2021.9666596	http://urn.fi/urn:nbn:fi-fe2022012710435	2021
Article in Journal	Methodology and Tools for Digital Twin Management—The FA3ST Approach	Ljiljana Stojanovic, Thomas Usländer, Friedrich Volz, Christian Weissenbacher, Jens Müller, Michael Jacoby, Tino Bischoff	IoT	10.3390/iot2040036	https://www.mdpi.com/2624-831X/2/4/36/html	2021
Article in Journal	A Workflow for Synthetic Data Generation and Predictive Maintenance for Vibration Data	Sahan Yoruç Setçuk, Perin Ünal, Özlem Albayrak, Moez Jomáa	Information	10.3390/info12100386	https://www.mdpi.com/2078-2489/12/10/386/html	2021
Publication in Conference proceedings/Workshop	Digitalization of a Steel Pipe Production Factory: STEEL4.0- A Family of Products Developed on Routes from Industry 3.0 to Industry 4.0	Özlem Al bayrak, Perin Ünal	The Proceedings of Fourth International Iron and Steel Symposium (UDCS'21) April 1-3, 2021, Karabuk University, Karabuk, Turkey, 2021	Not available	https://udcs21.karabuk.edu.tr/wp-content/uploads/2021/04/UDCS21_Proceeding-Book.pdf	2021
Article in Journal	Fusing Physical Process Models with Measurement Data Using FIR Calibration	Enso Ikonen, Istvan Selek	Journal of Control Engineering and Applied Informatics	Not available	http://www.ceai.srait.ro/index.php?journal=ceai&page=article&op=view&path%5B%5D=7173&path%5B%5D=1610	2021
Article in Journal	An Approach for Realizing Hybrid Digital Twins Using Asset Administration Shells and Apache StreamPipes	Michael Jacoby, Branislav Jovicic, Ljiljana Stojanovic, Nenad Stojanović	Information	10.3390/info12060217	https://www.mdpi.com/2078-2489/12/6/217/html	2021
Article in Journal	Neuroscope: An Explainable AI Toolbox for Semantic Segmentation and Image Classification of Convolutional Neural Nets	Christian Schorr; Payman Goodarzi; Fei Chen; Tim Dahmen	Applied Sciences	10.3390/app11052199	https://www.mdpi.com/2076-3417/11/5/2199	2021
Chapter in a Book	Smart Steel Pipe Production Plant via Cognitive Digital Twins: A Case Study on Digitalization of Spiral Welded Pipe Machinery	Özlem Albayrak, Perin Ünal	Impact and Opportunities of Artificial Intelligence Techniques in the Steel Industry - Ongoing Applications, Perspectives and Future Trends	10.1007/978-3-030-69367-1_11	Not available	2021
Chapter in a Book	Smart Services in the Physical World: Digital Twins	Ljiljana Stojanovic, Sebastian R. Bader	Smart Service Management - Design Guidelines and Best Practices	10.1007/978-3-030-58182-4_12	Not available	2020
Article in Journal	Digital Twin and Internet of Things—Current Standards Landscape	Michael Jacoby, Thomas Usländer	Applied Sciences	10.3390/app10186519	http://publica.fraunhofer.de/documents/N-615319.html	2020
Publication in Conference proceedings/Workshop	COGNITWIN – Hybrid and Cognitive Digital Twins for the Process Industry	Sailesh Abburu, Arne J. Berre, Michael Jacoby, Dumitru Roman, Ljiljana Stojanovic, Nenad Stojanovic	2020 IEEE International Conference on Engineering, Technology and Innovation (ICE/ITMC)	10.1109/ice/itmc49519.2020.9198403	http://xplore.staging.ieee.org/ielx7/9193868/9198315/09198403.pdf?arnumber=9198403	2020
Publication in Conference proceedings/Workshop	Cognitive Digital Twins for the Process Industry	Abburu, Sailesh; Berre, Arne J.; Jacoby, Michael; Roman, Dumitru; Stojanovic, Ljiljana; Stojanovic, Nenad	International Conference on Advanced Cognitive Technologies and Applications	Not available	http://publica.fraunhofer.de/documents/N-621963.html	2020
Publication in Conference proceedings/Workshop	Calibration of Physical Models with Process Data using FIR Filtering	Enso Ikonen, Istvan Selek	2020 Australian and New Zealand Control Conference (ANZCC)	10.1109/anzcc50923.2020.9318340	http://jultika.oulu.fi/Record/nbnfi-fe202102094090	2020