

Publications for COGNITWIN Project (GA Number 870130)

No.	Type	Title	Authors	Title of the Journal/Proc./Book	DOI	Link	Year
1	Article in Journal	Hybrid and Cognitive Digital Twins for the Process Industry	Stein Tore Johansen, Perin Ünal, Özlem Albayrak, Enso Ikonen, Kasper J. Linnestad, Sudi Jawahery, Akhilesh K. Srivastava, Bjørn Tore Løvfall	Open Engineering	NA	NA	2023 (accepted for publication)
2	Publication in Conference proceedings/Workshop	Impact of Digital Twin Technology Utilization in Manufacturing on Sustainability: An Industrial Case Study	A.Fırat Ünal, Özlem Albayrak, Perin Ünal	PICMET '23 Conference	NA	https://www.picmet.org/new/Conferences/23/	2023
3	Article in Journal	Transfer Learning Enabled Bearing Fault Detection Methods Based on Image Representations of Single-Dimensional Signals” to SpringerInformation Systems Frontiers, A Journal of Research and InnovationJournal	Bilgin Umut Deveci, Mert Çeltikoglu, Özlem Albayrak, Perin Ünal, Pınar Kırıcı	Springer Information Systems Frontiers, A Journal of Research and Innovation	NA	https://www.springer.com/journal/10796	2023
4	Publication in Conference proceedings/Workshop	A Hybrid Digital Twin for Optimal Si-Production	Kasper Linnestad, Kjetil Hildal, Lars K. Jakobsson, Sølve Eidnes, Vemund Tjessem, Erlend L. Bjørnstad, Stein Wasbø	Proceedings of the Silicon for the Chemical & Solar Industry XVI	10.2139/ssrn.4121131	Link	2022
5	Publication in Conference proceedings/Workshop	Hybrid Modelling Approach to Optimize Fouling Management in a Circulating Fluidized Bed Boiler	Mika Liukkonen, Ari Kettunen, Jouni Miettinen, Enso Ikonen, Istvan Selek, Markus Neuvonen, Anders H. Hansen, Mathias Edelborg	FBC24 Fluidized Bed Conversion Conference 2022	NA	Not available	2022
6	Publication in Conference proceedings/Workshop	Control System Design and Implementation Based on Big Data and Ontology	Seyithan Temel, Emre Ummak, Abdülkadir Tokgöz, Furkan Işık, Özlem Albayrak, Perin Ünal, Murat Özbayoğlu	IEEE International Conference on Big Data Special session, 8th Special Session on Intelligent Data Mining	NA	https://bigdataieee.org/BigData2022/BigData2022_program.pdf	2022
7	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 Jomâa, 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
8	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
9	Publication in Conference proceedings/Workshop	Asset Administration Shell Generation and Usage for Digital Twins: A Case Study for Non-destructive Testing	Yallıç, F., Albayrak, Ö. and Ünal, P.	In Proceedings of the 3rd International Conference on Innovative Intelligent Industrial Production and Logistics	10.5220/0011561400003329	Link	2022
10	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
11	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
12	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
13	Publication in Conference proceedings/Workshop	A Comparison of Deep Transfer Learning Methods on Bearing Fault Detection	Deveci, B.U., Çeltikoğlu, M., Alp, T., Albayrak, Ö., Ünal, P., Kırıcı, P.,	8th International Conference on Future Internet of Things and Cloud (FiCloud 2021).	https://doi.org/10.1109/FiCloud49777.2021.00048	https://ieeexplore.ieee.org/document/9590251	2021
14	Publication in Conference proceedings/Workshop	Simultaneous Prediction of Remaining-Useful-Life and Failure-Likelihood with GRU-based Deep Networks for Predictive Maintenance Analysis.	Kaleli, A. Y., Ünal, A. F., & Ozer, S.	44th International Conference on Telecommunications and Signal Processing (TSP) (pp. 301-304). IEEE.	10.1109/TSP52935.2021.9522592	https://ieeexplore.ieee.org/document/9522592	2021
15	Publication in Conference proceedings/Workshop	A Comprehensive 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
16	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/htm	2021
17	Article in Journal	A Workflow for Synthetic Data Generation and Predictive Maintenance for Vibration Data	Selcuk, ŞY, Ünal, P., Albayrak, Ö, Jomâa, Moez.,	Multidisciplinary Digital Publishing Institute (MDPI)	10.3390/info12100386	https://www.mdpi.com/2078-2489/12/10/386	2021
18	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 Albayrak Perin Ünal	Fifth International Iron & Steel Symposium, Data Science in Process Engineering	NA	Link	2021
19	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

20	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/htm	2021
21	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
22	Publication in Conference proceedings/Workshop	Transfer Learning Enabled Bearing Fault Detection Methods Based on Image Representations of Single Dimensional Signal	Deveci, B.U., Çeltikoğlu, M., Alp, T., Albayrak, Ö., Unal, P., Kırıcı, P	The 8th International Conference on Future Internet of Things and Cloud (FiCloud 2021).	NA	NA	2021
23	Publication in Conference proceedings/Workshop	Smart Steel Pipe Production Plant via Cognitive Digital Twins: A Case Study on Digitalization of Spiral Welded Pipe Machinery	Özlem Albayrak Perin Ünal	Advances in Intelligent Systems and Computing Volume 1338: "Impact and Opportunities of Artificial Intelligence Techniques in the Steel Industry: Ongoing Applications, Perspectives and Future Trends", V. Colla, C. Pietrosanti Eds.	https://doi.org/10.1007/978-3-030-69367-1_11	https://link.springer.com/chapter/10.1007/978-3-030-69367-1_11	2021
24	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
25	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
26	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
27	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
28	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