

Advancement in production engineering education through Virtual Learning Factory Toolkit concept

Mahmood, Kashif; Otto, Tauno; Kuts, Vladimir Proceedings of the Estonian Academy of Sciences 2021 / p. 374-382 : ill <https://doi.org/10.3176/proc.2021.4.02> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

An IoT-based approach to digitalize a manufacturing system

Mahmood, Kashif; Otto, Tauno; Karaulova, Tatjana; Ševtšenko, Eduard 17th International Symposium "Topical Problems in the Field of Electrical and Power Engineering". Doctoral school of energy and geotechnology. III : Kuressaare, Estonia, January 15-20, 2018 2018 / p. 257-261 : ill http://ise.elnet.ee/record=b2950215~S2*est

Analysis of Industry 4.0 capabilities: a perspective of educational institutions and needs of industry

Mahmood, Kashif; Otto, Tauno; Kristensen, Jesper H.; Heidemann Lassen, Astrid; Brunoe, Thomas D.; Schou, Casper; Christiansen, Lasse; Laursen, Esben Skov Towards Sustainable Customization : Bridging Smart Products and Manufacturing Systems : proceedings of the 8th Changeable, Agile, Reconfigurable and Virtual Production Conference (CARV2021) and the 10th World Mass Customization & Personalization Conference (MCPC2021), Aalborg, Denmark, October/November 2021 2022 / p. 887–894 https://doi.org/10.1007/978-3-030-90700-6_101 [Conference proceedings at Scopus](#) [Article at Scopus](#)

Analysis of machine production processes by risk assessment approach

Mahmood, Kashif; Ševtšenko, Eduard Journal of machine engineering 2015 / p. 112-124 : ill

An approach to analyze the performance of advanced manufacturing environment

Mahmood, Kashif; Otto, Tauno; Golova, Jelena; Kangru, Tavo; Kuts, Vladimir Procedia CIRP 2020 / p. 628–633 <https://doi.org/10.1016/j.procir.2020.04.042> [Conference Proceedings at Scopus](#) [Article at Scopus](#)

An approach to develop a digital twin for industry 4.0 systems : manufacturing automation case studies

Guerra-Zubiaga, David; **Kuts, Vladimir; Mahmood, Kashif; Bondar, Alex;** Nasajpour-Esfahani, Navid; **Otto, Tauno** International Journal of Computer Integrated Manufacturing 2021 / p. 933-949 : ill <https://doi.org/10.1080/0951192X.2021.1946857> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Autonomous mobile robots for production logistics: a process optimization model modification

Raamets, Tõnis; Majak, Jüri; Karjust, Kristo; Mahmood, Kashif; Hermaste, Aigar Proceedings of the Estonian Academy of Sciences 2024 / p. 134-141 : ill <https://doi.org/10.3176/proc.2024.2.06>

Collaborative project management framework for partner network initiation

Ševtšenko, Eduard; Poljantšikov, Igor; Mahmood, Kashif; Kangilaski, Taivo; Norta, Alexander Procedia engineering 2015 / p. 159-168 : ill <https://doi.org/10.1016/j.proeng.2015.01.354> [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Collaborative project management framework for partner network initiation in machining domain [Online resource]

Ševtšenko, Eduard; Polyantchikov, Igor; **Mahmood, Kashif; Kangilaski, Taivo; Norta, Alexander; Karaulova, Tatjana;** Perm, Ardo Proceedings of the 18th Online World Conference on Soft Computing in Industrial Applications (WSC18) 2018 / p. 215-233 : ill https://doi.org/10.1007/978-3-030-00612-9_19 <https://link.springer.com/content/pdf/bfm%3A978-3-030-00612-9%2F1.pdf> [Conference proceedings at Scopus](#) [Article at Scopus](#)

Development of a smart workstation by using AR technology

Värno, Kätlin; **Mahmood, Kashif; Otto, Tauno; Kuts, Vladimir** Proceedings of the 30th International DAAAM Symposium : Intelligent Manufacturing & Automation, 23-26th October 2019, Zadar, Croatia 2019 / 1061-1067 : ill <https://doi.org/10.2507/30th.daaam.proceedings.148>

Development of a smart workstation by using AR technology

Värno, Kätlin; Otto, Tauno; Mahmood, Kashif; Kuts, Vladimir The application track, posters and demos of EuroVR : Proceedings of the 16th Annual EuroVR Conference - 2019 2019 / p. 19–22 : ill <https://doi.org/10.32040/2242-122X2019.T357> <https://www.vtresearch.com/sites/default/files/pdf/technology/2019/T357.pdf>

Development of an AR-based application for assembly assistance and servicing

Mahmood, Kashif; Pizzagalli, Simone Luca; Otto, Tauno; Symotiuk, Ivan Procedia CIRP 2024 / p. 638-643 <https://doi.org/10.1016/j.procir.2024.04.017>

Development of an AR-based application for assembly assistance and servicing

Mahmood, Kashif; Pizzagalli, Simone Luca; Otto, Tauno; Symotiuk, Ivan 34th CIRP Design Conference CIRP2024, 3-5 June 2024, Cranfield University, UK : [programme] 2024 / 1 p <https://cranfield.shorthandstories.com/cirp-2024/index.html>

Development of cyber-physical production systems based on modelling technologies

Mahmood, Kashif; Karaulova, Tatjana; Otto, Tauno; Ševtšenko, Eduard Proceedings of the Estonian Academy of Sciences 2019 / p. 348–355 : ill http://www.kirj.ee/32601/?tpl=1061&c_tpl=1064 <https://doi.org/10.3176/proc.2019.4.02> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Development of process optimization model for autonomous mobile robot used in production logistics

Majak, Jüri; Karjust, Kristo; Mahmood, Kashif; Hermaste, Aigar; Raamets, Tõnis AIP conference proceedings 2024 / art. 020008 <https://doi.org/10.1063/5.0189299>

Development of virtual learning factory toolkit for production engineering education

Mahmood, Kashif; Otto, Tauno; Kuts, Vladimir; Terkaj, Walter; Urgo, Marcello; Haidegger, Geza IOP conference series : materials science and engineering 2021 / art. 012039, 8 p <https://doi.org/10.1088/1757-899X/1140/1/012039>

Elaboration of framework for green and cost efficient package development for electronic industry

Ševtšenko, Eduard; Karaulova, Tatjana; Pohlak, Meelis; Mahmood, Kashif International Conference on Innovative Technologies : IN-TECH 2016 : Prague : proceedings 2016 / p. 239-242 : ill http://www.in-tech.info/download/INTECH_2016_proceedings.pdf

Enhancing the partner selection process in a Sustainable Partner Network

Ševtšenko, Eduard; Mahmood, Kashif; Karaulova, Tatjana IFAC-PapersOnLine 2019 / p. 2425-2430 : ill <https://doi.org/10.1016/j.ifacol.2019.11.570> [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

A framework for developing educational industry 4.0 activities and study materials

Christiansen, Lasse; Edvardsen Hvidsten, Tommy; Hemdrup Kristensen, Jesper; Gebhardt, Jonas; **Mahmood, Kashif; Otto, Tauno;** Heidemann Lassen, Astrid; Ditlev Brunoe, Thomas; Schou, Casper; Skov Laursen, Esben Education Sciences 2022 / art. 659 <https://doi.org/10.3390/educsci12100659> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Industrial data analytics in manufacturing shop floor level

Moor, Madis; Pakkanen, Jarkko; **Raamets, Tõnis; Mahmood, Kashif; Riives, Jüri** AIP conference proceedings 2024 / art. 030006 <https://doi.org/10.1063/5.0189502>

Innovative management and implementation of applied research project "Green Cost-Efficient Package Selection"

Ševtšenko, Eduard; Karaulova, Tatjana; Pohlak, Meelis; Mahmood, Kashif; Tamm, Martin; Leht, Kaupo Case study of innovative projects : successful real cases 2017 / p. 143-168 : ill <http://dx.doi.org/10.5772/67541>

Innovative methods of engineering education popularization at schools

Ševtšenko, Eduard; Karaulova, Tatjana; Igavens, Maris; Strods, Gunars; **Mahmood, Kashif** Proceedings of the Estonian Academy of Sciences 2019 / p. 356-363 : ill http://www.kirj.ee/32591/?tpl=1061&c_tpl=1064 <https://doi.org/10.3176/proc.2019.4.01> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Intelligent decision making approach for performance evaluation of a robot-based manufacturing cell

Kangru, Tavo; Riives, Jüri; Otto, Tauno; Pohlak, Meelis; Mahmood, Kashif ASME 2018 International Mechanical Engineering Congress and Exposition : Pittsburgh, Pennsylvania, USA, November 9–15, 2018 2018 / Paper No. IMECE2018-86666, pp. V002T02A092; 10 p. : ill <http://doi.org/10.1115/IMECE2018-86666>

IoT-based senses for virtual enterprises

Mahmoodpour, Mehdi; **Mahmood, Kashif;** Lobov, Andrei IECON 2018 - 44th Annual Conference of the IEEE Industrial Electronics Society : proceedings 2018 / p. 4181-4186 : ill <http://doi.org/10.1109/IECON.2018.8592796>

Knowledge-driven based performance analysis of robotic manufacturing cell for design improvement

Kangru, Tavo; Mahmood, Kashif; Otto, Tauno; Moor, Madis; **Riives, Jüri** ASME 2020 : International Mechanical Engineering Congress and Exposition, November 16–19, 2020 : Virtual, Online : proceedings 2020 / Paper No: IMECE2020-23541, V006T06A032 ; 8 p <https://doi.org/10.1115/IMECE2020-23541>

Layout planning and analysis of a Flexible Manufacturing System based on 3D Simulation and Virtual Reality

Mahmood, Kashif; Otto, Tauno; Chakraborty, A. Procedia CIRP 2023 / p. 201-206 <https://doi.org/10.1016/j.procir.2023.08.036> [Conference proceedings at Scopus](#) [Article at Scopus](#)

Lean automation for low-volume manufacturing environment

Karaulova, Tatjana; Andronnikov, Konstantin; **Mahmood, Kashif; Ševtšenko, Eduard** Proceedings of the 30th International DAAAM Symposium : Intelligent Manufacturing & Automation, 23-26th October 2019, Zadar, Croatia 2019 / p. 0059-0068 : ill <https://doi.org/10.2507/30th.daaam.proceedings.008>

Multitier digital twin approach for agile supply chain management

Ševtšenko, Eduard; Mahmood, Kashif; Karaulova, Tatjana; Raji, Oluwole Ibrahim ASME 2020 : International Mechanical Engineering Congress and Exposition, November 16–19, 2020 : Virtual, Online : proceedings 2020 / Paper No: IMECE2020-23760, 10 p <https://doi.org/10.1115/IMECE2020-23760>

Performance analysis of a flexible manufacturing system (FMS)

Mahmood, Kashif; Karaulova, Tatjana; Otto, Tauno; Ševtšenko, Eduard Procedia CIRP 2017 / p. 424-429 : ill <https://doi.org/10.1016/j.procir.2017.03.123> [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Performance evaluation by using overall equipment effectiveness (OEE) : an analyzing tool

Mahmood, Kashif; Otto, Tauno; Ševtšenko, Eduard; Karaulova, Tatjana International Conference on Innovative Technologies : IN-TECH 2016 : Prague : proceedings 2016 / p. 185-188 : ill http://www.in-tech.info/download/INTECH_2016_proceedings.pdf

A Performance evaluation concept for production systems in an SME network

Mahmood, Kashif; Lanz, Minna; Toivonen, Ville; **Otto, Tauno** Procedia CIRP 2018 / p. 603-608 : ill
<https://doi.org/10.1016/j.procir.2018.03.182> [Conference Proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Planning and acquisition of real-time production data through the virtual factory in chemical industry

Raamets, Tõnis; Karjust, Kristo; Hermaste, Aigar; Mahmood, Kashif ASME 2021 International Mechanical Engineering Congress and Exposition 2021 / paper no: IMECE2021-73080, 9 p <https://doi.org/10.1115/IMECE2021-73080>

Pneumatics-case : enhancing learning through augmented reality and digital twin technology

Boychuk, Rostyslav; Symotiuk, Ivan; Rõbnikov, Daniil; Kuts, Vladimir; Mahmood, Kashif; Pizzagalli, Simone Luca; Otto, Tauno EuroXR 2024 : proceedings of the 21st EuroXR international conference 2024 / p. 261-266 <https://doi.org/10.32040/2242-122X.2024.T432>

Production intralogistics automation based on 3D simulation analysis

Mahmood, Kashif; Karjust, Kristo; Raamets, Tõnis Journal of machine engineering 2021 / p. 102-115 : ill
<https://doi.org/10.36897/jme/137081> [Journal metrics at Scopus](#) [Article at Scopus](#)

Productivity improvement by implementing lean production approach

Mahmood, Kashif; Ševtšenko, Eduard Proceedings of the 10th International Conference of DAAAM Baltic Industrial Engineering, 12-13th May 2015, Tallinn, Estonia 2015 / p. 45-51 : ill

Productivity improvement by implementing lean production approach

Mahmood, Kashif Doctoral School of Energy and Geotechnology II : closing conference of the project : Pärnu, Estonia, January 12-17, 2015 2015 / p. 183-188 : ill

Reliability management approach for a virtual enterprise of SMEs in a manufacturing domain = Usaldusväarsuse juhtimise raamistik tootmisvaldkonna väikese ja keskmise suurusega virtuaalettevõtetele

Mahmood, Kashif 2019 <https://digi.lib.ttu.ee/i/?11235>

Risk assessment approach for a virtual enterprise of small and medium-sized enterprises

Mahmood, Kashif; Ševtšenko, Eduard; Karaulova, Tatjana; Otto, Tauno Proceedings of the Estonian Academy of Sciences 2018 / p. 17-27 : ill <https://doi.org/10.3176/proc.2017.4.27> http://www.ester.ee/record=b2355998*est [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Risk assessment method for partner network of SMEs

Mahmood, Kashif; Ševtšenko, Eduard 16th International Symposium "Topical Problems in the Field of Electrical and Power Engineering. Doctoral School of Energy and Geotechnology III" : Pärnu, Estonia, January 16-21, 2017 2017 / p. 184-188 : ill
http://www.ester.ee/record=b4650094*est

Simulation based feasibility analysis of autonomously movable robot arm

Vaher, Kristo; Mahmood, Kashif; Otto, Tauno; Riives, Jüri IOP conference series : materials science and engineering 2021 / art. 012055, 6 p. : ill <https://doi.org/10.1088/1757-899X/1140/1/012055>

Simulation based feasibility analysis of autonomously movable robot arm

Vaher, Kristo; Mahmood, Kashif; Otto, Tauno; Riives, Jüri Proceedings of the Estonian Academy of Sciences 2021 / p. 422-428 : ill <https://doi.org/10.3176/proc.2021.4.08> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Simulation based Performance Analysis of Production Intralogistics

Golova, Jelena; Mahmood, Kashif; Raamets, Tõnis IOP Conference Series : Materials Science and Engineering 2021 / art. 012026, 6p. : ill <https://doi.org/10.1088/1757-899X/1140/1/012026>

Suitability analysis of using industrial robots in manufacturing

Kangru, Tavo; Riives, Jüri; Mahmood, Kashif; Otto, Tauno Proceedings of the Estonian Academy of Sciences 2019 / p. 383–388 : ill http://www.kirj.ee/32687/?tpl=1061&c_tpl=1064 <https://doi.org/10.3176/proc.2019.4.06> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Supply chain digitalization framework for service/product satisfaction

Murumaa, Lea; Ševtšenko, Eduard; Karaulova, Tatjana; Mahmood, Kashif; Popell, Janek IOP conference series : materials science and engineering 2021 / art. 012041, p. 1–12 <https://doi.org/10.1088/1757-899x/1140/1/012041>

3D visualization and simulation of intra-logistics for manufacturing

Mahmood, Kashif 19th International Symposium "Topical problems in the field of electrical and power engineering. Doctoral school of energy and geotechnology. III" : Tartu, Estonia, January 14-17, 2020 2020 / p. 21-22 : ill https://www.ester.ee/record=b5291755*est

Troubleshooting process analysis and development of application for decision making enhancement

Mahmood, Kashif; Ševtšenko, Eduard; Karaulova, Tatjana; Branten, Eva; Maleki, Meysam 26th DAAAM International Symposium on Intelligent Manufacturing and Automation 2015 (DAAAM 2015) : Zadar, Croatia, 21-24 October 2015. Volume 1 2016 / p. 0663-0671 : ill <http://dx.doi.org/10.2507/26th.daaam.proceedings.090>

A workflow for extended reality-based learning in engineering education

Kuts, Vladimir; Otto, Tauno; Boychuk, Rostyslav; Mahmood, Kashif; Pizzagalli, Simone Luca Proceedings of the Estonian Academy of Sciences 2025 / p. 103-108 <https://doi.org/10.3176/proc.2025.2.03>