

Rafiq Ahmad

List of Publications by Year in descending order

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Version: 2024-02-01

107
papers

1,526
citations

361045

20
h-index

395343

33
g-index

110
all docs

110
docs citations

110
times ranked

968
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|---|-----|-----------|
| 1 | A scientometric analysis and critical review of computer vision applications for construction. Automation in Construction, 2019, 107, 102947. | 4.8 | 126 |
| 2 | The digitization of agricultural industry – a systematic literature review on agriculture 4.0. Smart Agricultural Technology, 2022, 2, 100042. | 3.1 | 107 |
| 3 | Towards automated aquaponics: A review on monitoring, IoT, and smart systems. Journal of Cleaner Production, 2020, 263, 121571. | 4.6 | 95 |
| 4 | A vision-based system for pre-inspection of steel frame manufacturing. Automation in Construction, 2019, 97, 151-163. | 4.8 | 75 |
| 5 | The impact on the mechanical properties of multi-material polymers fabricated with a single mixing nozzle and multi-nozzle systems via fused deposition modeling. International Journal of Advanced Manufacturing Technology, 2020, 106, 4509-4520. | 1.5 | 57 |
| 6 | Tensile Mechanical Behaviour of Multi-Polymer Sandwich Structures via Fused Deposition Modelling. Polymers, 2020, 12, 651. | 2.0 | 56 |
| 7 | A cost-driven process planning method for hybrid additive–subtractive remanufacturing. Journal of Manufacturing Systems, 2020, 55, 248-263. | 7.6 | 40 |
| 8 | A vision-based approach for automatic progress tracking of floor paneling in offsite construction facilities. Automation in Construction, 2021, 125, 103620. | 4.8 | 37 |
| 9 | A Topology Optimization Method for Hybrid Subtractive–Additive Remanufacturing. International Journal of Precision Engineering and Manufacturing - Green Technology, 2020, 7, 939-953. | 2.7 | 36 |
| 10 | In-field instrumented ergonomic risk assessment: Inertial measurement units versus Kinect V2. International Journal of Industrial Ergonomics, 2021, 84, 103147. | 1.5 | 33 |
| 11 | Safe and Automated Assembly Process using Vision Assisted Robot Manipulator. Procedia CIRP, 2016, 41, 771-776. | 1.0 | 32 |
| 12 | BIM-based decision support system for automated manufacturability check of wood frame assemblies. Automation in Construction, 2020, 111, 103065. | 4.8 | 31 |
| 13 | Real-time growth rate and fresh weight estimation for little gem romaine lettuce in aquaponic grow beds. Computers and Electronics in Agriculture, 2020, 179, 105827. | 3.7 | 30 |
| 14 | A knowledge-based intelligent decision system for production planning. International Journal of Advanced Manufacturing Technology, 2017, 89, 1717-1729. | 1.5 | 29 |
| 15 | Light-weight shape and topology optimization with hybrid deposition path planning for FDM parts. International Journal of Advanced Manufacturing Technology, 2018, 97, 1123-1135. | 1.5 | 29 |
| 16 | Scientometric Analysis and Systematic Review of Multi-Material Additive Manufacturing of Polymers. Polymers, 2021, 13, 1957. | 2.0 | 29 |
| 17 | Minimum length scale constraints in multi-scale topology optimisation for additive manufacturing. Virtual and Physical Prototyping, 2019, 14, 229-241. | 5.3 | 27 |
| 18 | Intelligent vision-based online inspection system of screw-fastening operations in light-gauge steel frame manufacturing. International Journal of Advanced Manufacturing Technology, 2020, 109, 645-657. | 1.5 | 27 |

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|----|--|-----|-----------|
| 19 | Feature-Based Methodology for Design of Geometric Benchmark Test Artifacts for Additive Manufacturing Processes. <i>Procedia CIRP</i> , 2018, 70, 84-89. | 1.0 | 25 |
| 20 | Algorithm for remanufacturing of damaged parts with hybrid 3D printing and machining process. <i>Manufacturing Letters</i> , 2018, 15, 38-41. | 1.1 | 24 |
| 21 | Generation of safe tool-paths for automatic manufacturing of light gauge steel panels in residential construction. <i>Automation in Construction</i> , 2019, 98, 46-60. | 4.8 | 20 |
| 22 | A Qualitative Tool Condition Monitoring Framework Using Convolution Neural Network and Transfer Learning. <i>Applied Sciences (Switzerland)</i> , 2020, 10, 7298. | 1.3 | 20 |
| 23 | New computer vision based Snakes and Ladders algorithm for the safe trajectory of two axis CNC machines. <i>CAD Computer Aided Design</i> , 2012, 44, 355-366. | 1.4 | 19 |
| 24 | A primitive-based 3D reconstruction method for remanufacturing. <i>International Journal of Advanced Manufacturing Technology</i> , 2019, 103, 3667-3681. | 1.5 | 19 |
| 25 | Instrumented Ergonomic Risk Assessment Using Wearable Inertial Measurement Units: Impact of Joint Angle Convention. <i>IEEE Access</i> , 2021, 9, 7293-7305. | 2.6 | 18 |
| 26 | How to adapt lean practices in SMEs to support Industry 4.0 in manufacturing. <i>Procedia Computer Science</i> , 2022, 200, 934-943. | 1.2 | 18 |
| 27 | 3D safe and intelligent trajectory generation for multi-axis machine tools using machine vision. <i>International Journal of Computer Integrated Manufacturing</i> , 2013, 26, 365-385. | 2.9 | 17 |
| 28 | Two-Axis Accelerometer Calibration and Nonlinear Correction Using Neural Networks: Design, Optimization, and Experimental Evaluation. <i>IEEE Transactions on Instrumentation and Measurement</i> , 2020, 69, 6787-6794. | 2.4 | 17 |
| 29 | Design, validation, and application of a hybrid shape memory alloy-magnetorheological fluid-based core bracing system under tension and compression. <i>Structures</i> , 2022, 35, 1151-1161. | 1.7 | 16 |
| 30 | Generation of safe and intelligent tool-paths for multi-axis machine-tools in a dynamic 2D virtual environment. <i>International Journal of Computer Integrated Manufacturing</i> , 2016, 29, 982-995. | 2.9 | 15 |
| 31 | Topology Optimization for Multipatch Fused Deposition Modeling 3D Printing. <i>Applied Sciences (Switzerland)</i> , 2020, 10, 943. | 1.3 | 15 |
| 32 | Real-time visual detection and correction of automatic screw operations in dimpled light-gauge steel framing with pre-drilled pilot holes. <i>Procedia Manufacturing</i> , 2019, 34, 798-803. | 1.9 | 14 |
| 33 | Multi-view feature modeling for design-for-additive manufacturing. <i>Advanced Engineering Informatics</i> , 2019, 39, 144-156. | 4.0 | 14 |
| 34 | Automated verification of 3D manufacturability for steel frame assemblies. <i>Automation in Construction</i> , 2020, 118, 103287. | 4.8 | 14 |
| 35 | Generation of safe tool-path for 2.5D milling/drilling machine-tool using 3D ToF sensor. <i>CIRP Journal of Manufacturing Science and Technology</i> , 2015, 10, 84-91. | 2.3 | 13 |
| 36 | Alberta Learning Factory for training reconfigurable assembly process value stream mapping. <i>Procedia Manufacturing</i> , 2018, 23, 237-242. | 1.9 | 13 |

| # | ARTICLE | IF | CITATIONS |
|----|--|-----|-----------|
| 37 | An ontology model to support the automated design of aquaponic grow beds. <i>Procedia CIRP</i> , 2021, 100, 55-60. | 1.0 | 13 |
| 38 | Material Selection Methodology for Additive Manufacturing Applications. <i>Procedia CIRP</i> , 2019, 84, 486-490. | 1.0 | 12 |
| 39 | Tribological behaviour of TiB ₂ -HfC ceramic tool material under dry sliding condition. <i>Ceramics International</i> , 2020, 46, 20320-20327. | 2.3 | 11 |
| 40 | Intelligent assisted maintenance plan generation for corrective maintenance. <i>Manufacturing Letters</i> , 2019, 21, 7-11. | 1.1 | 10 |
| 41 | Simulation-Driven Design of Wood Framing Support Systems for Off-Site Construction Machinery. <i>Journal of Construction Engineering and Management - ASCE</i> , 2020, 146, 04020075. | 2.0 | 10 |
| 42 | Ontology-Based Knowledge Modeling for Frame Assemblies Manufacturing. , 2019, , . | | 10 |
| 43 | An ontology model to represent aquaponics 4.0 system's knowledge. <i>Information Processing in Agriculture</i> , 2022, 9, 514-532. | 2.9 | 10 |
| 44 | Lean OR ERP – A Decision Support System to Satisfy Business Objectives. <i>Procedia CIRP</i> , 2018, 70, 422-427. | 1.0 | 9 |
| 45 | Level set-based heterogeneous object modeling and optimization. <i>CAD Computer Aided Design</i> , 2019, 110, 50-68. | 1.4 | 9 |
| 46 | Cutting performances of TiCN-HfC and TiCN-HfC-WC ceramic tools in dry turning hardened AISI H13. <i>Advances in Applied Ceramics</i> , 2020, 119, 380-386. | 0.6 | 9 |
| 47 | A novel SMA-magnetorheological hybrid bracing system for seismic control. <i>Engineering Structures</i> , 2021, 244, 112709. | 2.6 | 9 |
| 48 | Automatic Selection Tool of Quality Control Specifications for Off-site Construction Manufacturing Products: A BIM-based Ontology Model Approach. <i>Modular and Offsite Construction (MOC) Summit Proceedings</i> , 0, , 141-148. | 0.0 | 9 |
| 49 | The integrated process planning and scheduling of flexible job-shop-type remanufacturing systems using improved artificial bee colony algorithm. <i>Journal of Intelligent Manufacturing</i> , 2023, 34, 2963-2988. | 4.4 | 9 |
| 50 | Numerical Modeling and Analysis of Ti6Al4V Alloy Chip for Biomedical Applications. <i>Materials</i> , 2020, 13, 5236. | 1.3 | 8 |
| 51 | A Novel Deep Learning-based Automatic Damage Detection and Localization Method for Remanufacturing/Repair. <i>Computer-Aided Design and Applications</i> , 2021, 18, 1359-1372. | 0.4 | 8 |
| 52 | Curved layered fused filament fabrication: An overview. <i>Additive Manufacturing</i> , 2021, 47, 102354. | 1.7 | 8 |
| 53 | Feature extraction and process planning of integrated hybrid additive-subtractive system for remanufacturing. <i>Mathematical Biosciences and Engineering</i> , 2020, 17, 7274-7301. | 1.0 | 8 |
| 54 | A cyber-physical system approach to zero-defect manufacturing in light-gauge steel frame assemblies. <i>Procedia Computer Science</i> , 2022, 200, 924-933. | 1.2 | 8 |

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|----|--|-----|-----------|
| 55 | An efficient tool-path planning approach for repair of cylindrical components via laser cladding. Journal of Remanufacturing, 2021, 11, 137-146. | 1.6 | 7 |
| 56 | Application of Exact and Multi-Heuristic Approaches to a Sustainable Closed Loop Supply Chain Network Design. Sustainability, 2021, 13, 2433. | 1.6 | 7 |
| 57 | Real-time Implementation of Digital Twin for Robot Based Production Line. SSRN Electronic Journal, 0, , . | 0.4 | 7 |
| 58 | Feature-based modeling for industrial processes in the context of digital twins: A case study of HVOF process. Advanced Engineering Informatics, 2022, 51, 101486. | 4.0 | 7 |
| 59 | Automated Maintenance Plan Generation Based On CAD Model Feature Recognition. Procedia CIRP, 2018, 70, 35-40. | 1.0 | 6 |
| 60 | Online vision-based inspection system for thermoplastic hot plate welding in window frame manufacturing. Procedia CIRP, 2020, 93, 1316-1321. | 1.0 | 6 |
| 61 | Design and simulation of an automated robotic machining cell for cross-laminated timber panels. Procedia CIRP, 2021, 100, 175-180. | 1.0 | 6 |
| 62 | Human-Robot Collaboration: Twofold Strategy Algorithm to Avoid Collisions Using ToF Sensor. International Journal of Materials Mechanics and Manufacturing, 2015, 4, 144-147. | 0.2 | 6 |
| 63 | Lab Scale Implementation of Industry 4.0 for an Automatic Yogurt Filling Production System—Experimentation, Modeling and Process Optimization. Applied Sciences (Switzerland), 2021, 11, 9821. | 1.3 | 6 |
| 64 | A parametric simulation model for HVOF coating thickness control. International Journal of Advanced Manufacturing Technology, 2021, 116, 293-314. | 1.5 | 5 |
| 65 | Integrating lean production strategies, virtual reality technique and building information modeling method for mass customization in cabinet manufacturing. Engineering, Construction and Architectural Management, 2022, 29, 3970-3996. | 1.8 | 5 |
| 66 | Vision-Based Associative Robotic Recognition of Working Status in Autonomous Manufacturing Environment. Procedia CIRP, 2021, 104, 1535-1540. | 1.0 | 5 |
| 67 | Vision-based automated waste audits: a use case from the window manufacturing industry. International Journal of Advanced Manufacturing Technology, 2022, 119, 7735-7749. | 1.5 | 5 |
| 68 | Scientometric analysis and critical review of fused deposition modeling in the plastic recycling context. , 2022, 2, 100008. | | 5 |
| 69 | A Hybrid Method Based on Systems Approach to Enhance Experiential Learning in Mechatronic Education. , 2019, , . | | 4 |
| 70 | A science mapping study on learning factories research. Procedia Manufacturing, 2020, 45, 84-89. | 1.9 | 4 |
| 71 | Quantifying the Impact of Inspection Processes on Production Lines through Stochastic Discrete-Event Simulation Modeling. Modelling, 2021, 2, 406-424. | 0.8 | 4 |
| 72 | Dynamic response of frame structures with shape memory alloy -magnetorheological fluid-based bracing system by nonlinear time-history analysis. Journal of Building Engineering, 2021, 43, 102914. | 1.6 | 4 |

| # | ARTICLE | IF | CITATIONS |
|----|---|-----|-----------|
| 73 | An Improved Robot Path Planning Algorithm for a Novel Self-adapting Intelligent Machine Tending Robotic System. <i>Mechanisms and Machine Science</i> , 2020, , 53-64. | 0.3 | 4 |
| 74 | Automated Stacker Cranes: A Two-Step Storage Reallocation Process for Enhanced Service Efficiency. <i>Processes</i> , 2022, 10, 2. | 1.3 | 4 |
| 75 | Minimizing joist cutting waste through dynamic waste allocation in panelized floor manufacturing. <i>International Journal of Construction Management</i> , 2019, , 1-13. | 2.2 | 3 |
| 76 | Automated Feature Extraction for Hybrid Additive-Subtractive Remanufacturing. <i>Procedia CIRP</i> , 2020, 93, 56-61. | 1.0 | 3 |
| 77 | Meta-Material Topology Optimization with Geometric Control. <i>Computer-Aided Design and Applications</i> , 2019, 16, 951-961. | 0.4 | 3 |
| 78 | Increasing Throughput in Warehouses: The Effect of Storage Reallocation and the Location of Input/Output Station. <i>Sustainability</i> , 2022, 14, 4611. | 1.6 | 3 |
| 79 | Topology optimization of the vibrating structure for fused deposition modelling of parts considering a hybrid deposition path pattern. <i>International Journal of Computer Integrated Manufacturing</i> , 2023, 36, 1379-1396. | 2.9 | 3 |
| 80 | An Intelligent Manufacturing Approach Based on a Novel Deep Learning Method for Automatic Machine and Working Status Recognition. <i>Applied Sciences (Switzerland)</i> , 2022, 12, 5697. | 1.3 | 3 |
| 81 | Numerical Simulation and Optimization of Microwave Heating Effect on Coal Seam Permeability Enhancement. <i>Technologies</i> , 2022, 10, 70. | 3.0 | 3 |
| 82 | An NC Code Based Machining Movement Simulation Method for a Parallel Robotic Machine. <i>Lecture Notes in Computer Science</i> , 2017, , 3-13. | 1.0 | 2 |
| 83 | An open-source powered and ergonomic personal protective respirator for frontline COVID-19 response. <i>HardwareX</i> , 2021, 10, e00223. | 1.1 | 2 |
| 84 | Design of a New Game for Teaching Assembly Process. <i>Mechanisms and Machine Science</i> , 2020, , 44-52. | 0.3 | 2 |
| 85 | Ant-Air Self-learning Algorithm for Path Planning in a Cluttered Environment. <i>International Journal of Materials Mechanics and Manufacturing</i> , 2015, 4, 127-130. | 0.2 | 2 |
| 86 | A decision-making tool to integrate lean 4.0 in windows manufacturing using simulation and optimization models. , 2020, , . | | 2 |
| 87 | Vision-Based Damage Localization Method for an Autonomous Robotic Laser Cladding Process. <i>Procedia CIRP</i> , 2021, 104, 827-832. | 1.0 | 2 |
| 88 | Safe and Automated Tool-Path Generation for Multi-Axis Production Machines. , 2014, , . | | 1 |
| 89 | AllFactory: An Aquaponics 4.0 Transdisciplinary Educational and Applied Research Learning Factory at the University of Alberta. <i>SSRN Electronic Journal</i> , 0, , . | 0.4 | 1 |
| 90 | An Automated Intelligent Feature-based Maintenance Plan Generation Method. <i>Computer-Aided Design and Applications</i> , 2021, 18, 1373-1389. | 0.4 | 1 |

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|-----|---|-----|-----------|
| 91 | Investigating the effects of reduced technological constraints on cycle time through simulation modelling for automated steel wall framing. Modular and Offsite Construction (MOC) Summit Proceedings, 0, , . | 0.0 | 1 |
| 92 | Game Methodology for Design Methods and Tools Selection. Journal of Learning Design, 2014, 7, . | 0.8 | 1 |
| 93 | A Collaborative Scheme for DFX Techniques in Concurrent Engineering Mitigated with Total Design Activity Model. Modular and Offsite Construction (MOC) Summit Proceedings, 0, , 1-8. | 0.0 | 1 |
| 94 | A decision support system to define, evaluate and guide the lean assessment and implementation at the shop-floor level. International Journal of Manufacturing Research, 2021, 16, 325. | 0.1 | 1 |
| 95 | Increasing the operating depth of a Teflon underwater vehicle using a magnetic field. Ocean Engineering, 2022, 250, 111078. | 1.9 | 1 |
| 96 | Implementation of Lean Tools to Improve Mass Production of a Laser Cladding Process. , 2021, , . | | 1 |
| 97 | Path planning self-learning Algorithm for a dynamic changing environment. MATEC Web of Conferences, 2016, 42, 03002. | 0.1 | 0 |
| 98 | A decision support system to define, evaluate, and guide the lean assessment and implementation at the shop floor level. International Journal of Manufacturing Research, 2021, 16, 1. | 0.1 | 0 |
| 99 | Meta-Material Topology Optimization with Geometric Control. , 0, , . | | 0 |
| 100 | A Survey on Information Flow Tools in Alberta's Construction Industry. Modular and Offsite Construction (MOC) Summit Proceedings, 0, , 496-503. | 0.0 | 0 |
| 101 | A Decision Tool to Simulate the Concurrent Interdependencies Between Multi-DFX Techniques in Machine Design Conflict Resolution. , 2019, , . | | 0 |
| 102 | Text Recognition and Machine Learning: For Impaired Robots and Humans. Alberta Academic Review, 2019, 2, 31-32. | 0.0 | 0 |
| 103 | Flying Spiders: A Reconfigurable Spider Drone For Education. Alberta Academic Review, 2019, 2, 3-4. | 0.0 | 0 |
| 104 | Deep Learning-based Automatic Damage Recognition and Spatial Localization for Remanufacturing/Repair. , 0, , . | | 0 |
| 105 | Teaching machines to optimizing machining parameters: using independent fuzzy logic controller and image data. SN Applied Sciences, 2022, 4, 107. | 1.5 | 0 |
| 106 | Use of Frozen Silt Mat, an Alternative to Crane Timber Mat to Minimize Energy as Ninth Waste and to Reduce CO ₂ Emissions. , 0, , . | | 0 |
| 107 | Efficient Commercial Classification of Agricultural Products using Convolutional Neural Networks. IAES International Journal of Robotics and Automation, 2021, 10, 353. | 0.2 | 0 |