

James Woodcock

List of Publications by Year in descending order

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Version: 2024-02-01

145
papers

2,802
citations

279487

23
h-index

233125

45
g-index

163
all docs

163
docs citations

163
times ranked

1024
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|--|------|-----------|
| 1 | Formal methods. ACM Computing Surveys, 2009, 41, 1-36. | 16.1 | 436 |
| 2 | Systems of Systems Engineering. ACM Computing Surveys, 2015, 48, 1-41. | 16.1 | 297 |
| 3 | The Semantics of Circus. Lecture Notes in Computer Science, 2002, , 184-203. | 1.0 | 126 |
| 4 | A Refinement Strategy for Circus. Formal Aspects of Computing, 2003, 15, 146-181. | 1.4 | 105 |
| 5 | A UTP semantics for Circus. Formal Aspects of Computing, 2009, 21, 3-32. | 1.4 | 102 |
| 6 | Integrated tool chain for model-based design of Cyber-Physical Systems: The INTO-CPS project. , 2016, , . | | 74 |
| 7 | RoboChart: modelling and verification of the functional behaviour of robotic applications. Software and Systems Modeling, 2019, 18, 3097-3149. | 2.2 | 73 |
| 8 | ZRC – A Refinement Calculus for Z. Formal Aspects of Computing, 1998, 10, 267-289. | 1.4 | 43 |
| 9 | Isabelle/UTP: A Mechanised Theory Engineering Framework. Lecture Notes in Computer Science, 2015, , 21-41. | 1.0 | 37 |
| 10 | A Concurrent Language for Refinement. , 2001, , . | | 37 |
| 11 | Unifying classes and processes. Software and Systems Modeling, 2005, 4, 277-296. | 2.2 | 35 |
| 12 | Refinement in Circus. Lecture Notes in Computer Science, 2002, , 451-470. | 1.0 | 34 |
| 13 | Cyber-Physical Systems Design: Formal Foundations, Methods and Integrated Tool Chains. , 2015, , . | | 33 |
| 14 | More Powerful Z Data Refinement: Pushing the State of the Art in Industrial Refinement. Lecture Notes in Computer Science, 1998, , 284-307. | 1.0 | 33 |
| 15 | Non-interference through determinism*. Journal of Computer Security, 1996, 4, 27-53. | 0.5 | 31 |
| 16 | ArcAngel: a Tactic Language for Refinement. Formal Aspects of Computing, 2003, 15, 28-47. | 1.4 | 31 |
| 17 | The verified software repository: a step towards the verifying compiler. Formal Aspects of Computing, 2006, 18, 143-151. | 1.4 | 31 |
| 18 | A Tutorial Introduction to Designs in Unifying Theories of Programming. Lecture Notes in Computer Science, 2004, , 40-66. | 1.0 | 31 |

| # | ARTICLE | IF | CITATIONS |
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| 19 | A tactic calculus " abridged version. Formal Aspects of Computing, 1996, 8, 479-489. | 1.4 | 29 |
| 20 | The certification of the Mondex electronic purse to ITSEC Level E6. Formal Aspects of Computing, 2008, 20, 5-19. | 1.4 | 29 |
| 21 | Angelic nondeterminism in the unifying theories of programming. Formal Aspects of Computing, 2006, 18, 288-307. | 1.4 | 26 |
| 22 | A Denotational Semantics for Circus. Electronic Notes in Theoretical Computer Science, 2007, 187, 107-123. | 0.9 | 25 |
| 23 | A Theory of Pointers for the UTP. Lecture Notes in Computer Science, 2008, , 141-155. | 1.0 | 25 |
| 24 | Mechanising Mondex with Z/Eves. Formal Aspects of Computing, 2008, 20, 117-139. | 1.4 | 24 |
| 25 | Mechanising a formal model of flash memory. Science of Computer Programming, 2009, 74, 219-237. | 1.5 | 23 |
| 26 | Unifying theories in ProofPower-Z. Formal Aspects of Computing, 2013, 25, 133-158. | 1.4 | 23 |
| 27 | Slotted-Circus. Lecture Notes in Computer Science, 2007, , 75-97. | 1.0 | 23 |
| 28 | A Weakest Precondition Semantics for Z. Computer Journal, 1998, 41, 1-15. | 1.5 | 22 |
| 29 | Unifying theories of reactive design contracts. Theoretical Computer Science, 2020, 802, 105-140. | 0.5 | 22 |
| 30 | Safety-critical Java programs from Circus models. Real-Time Systems, 2013, 49, 614-667. | 1.1 | 21 |
| 31 | New Opportunities for Integrated Formal Methods. ACM Computing Surveys, 2020, 52, 1-36. | 16.1 | 21 |
| 32 | Formalising Flash Memory: First Steps. , 2007, , . | | 20 |
| 33 | First Steps in the Verified Software Grand Challenge. 2011 IEEE 34th Software Engineering Workshop, 2006, , . | 0.0 | 19 |
| 34 | The Safety-Critical Java memory model formalised. Formal Aspects of Computing, 2013, 25, 37-57. | 1.4 | 19 |
| 35 | Unifying semantic foundations for automated verification tools in Isabelle/UTP. Science of Computer Programming, 2020, 197, 102510. | 1.5 | 19 |
| 36 | Unifying theories of time with generalised reactive processes. Information Processing Letters, 2018, 135, 47-52. | 0.4 | 18 |

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| 37 | Unifying Theories in ProofPower-Z. Lecture Notes in Computer Science, 2006, , 123-140. | 1.0 | 18 |
| 38 | Features of Integrated Model-Based Co-modelling and Co-simulation Technology. Lecture Notes in Computer Science, 2018, , 377-390. | 1.0 | 18 |
| 39 | Unifying Heterogeneous State-Spaces with Lenses. Lecture Notes in Computer Science, 2016, , 295-314. | 1.0 | 17 |
| 40 | Towards Semantically Integrated Models and Tools for Cyber-Physical Systems Design. Lecture Notes in Computer Science, 2016, , 171-186. | 1.0 | 17 |
| 41 | Semantic Domains for Handel-C. Electronic Notes in Theoretical Computer Science, 2003, 74, 1-20. | 0.9 | 16 |
| 42 | Safety-critical Java in Circus. , 2011, , . | | 16 |
| 43 | Automating Verification of State Machines with Reactive Designs and Isabelle/UTP. Lecture Notes in Computer Science, 2018, , 137-155. | 1.0 | 15 |
| 44 | Foundations for Model-Based Engineering of Systems of Systems. , 2014, , 1-19. | | 15 |
| 45 | An inconsistency in procedures, parameters, and substitution in the refinement calculus. Science of Computer Programming, 1999, 33, 87-96. | 1.5 | 14 |
| 46 | Unifying Theories of Parallel Programming. Lecture Notes in Computer Science, 2002, , 24-37. | 1.0 | 14 |
| 47 | A Refinement Based Strategy for Local Deadlock Analysis of Networks of CSP Processes. Lecture Notes in Computer Science, 2014, , 62-77. | 1.0 | 14 |
| 48 | The Safety-Critical Java Memory Model: A Formal Account. Lecture Notes in Computer Science, 2011, , 246-261. | 1.0 | 14 |
| 49 | Circus Time with Reactive Designs. Lecture Notes in Computer Science, 2013, , 68-87. | 1.0 | 14 |
| 50 | Operational Semantics for Model Checking Circus. Lecture Notes in Computer Science, 2005, , 237-252. | 1.0 | 13 |
| 51 | POSIX file store in Z/Eves: an experiment in the verified software repository. , 2007, , . | | 13 |
| 52 | POSIX and the Verification Grand Challenge: A Roadmap. , 2008, , . | | 13 |
| 53 | POSIX file store in Z/Eves: An experiment in the verified software repository. Science of Computer Programming, 2009, 74, 238-257. | 1.5 | 13 |
| 54 | Travelling Processes. Lecture Notes in Computer Science, 2004, , 381-399. | 1.0 | 13 |

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| 55 | The Rudiments of Algorithm Refinement. Computer Journal, 1992, 35, 441-450. | 1.5 | 12 |
| 56 | Refinement of Actions in Circus,. Electronic Notes in Theoretical Computer Science, 2002, 70, 132-162. | 0.9 | 12 |
| 57 | Uncertainty Quantification and Runtime Monitoring Using Environment-Aware Digital Twins. Lecture Notes in Computer Science, 2021, , 72-87. | 1.0 | 12 |
| 58 | Towards a UTP Semantics for Modelica. Lecture Notes in Computer Science, 2017, , 44-64. | 1.0 | 12 |
| 59 | Probabilistic modelling and verification using RoboChart and PRISM. Software and Systems Modeling, 2022, 21, 667-716. | 2.2 | 12 |
| 60 | Mechanising the Alphabetised Relational Calculus. Electronic Notes in Theoretical Computer Science, 2004, 95, 209-225. | 0.9 | 11 |
| 61 | prialt in Handel-C: an operational semantics. International Journal on Software Tools for Technology Transfer, 2005, 7, 248-267. | 1.7 | 11 |
| 62 | Unifying Theories of Programming in Isabelle. Lecture Notes in Computer Science, 2013, , 109-155. | 1.0 | 11 |
| 63 | Putting Formal Specifications under the Magnifying Glass: Model-based Testing for Validation. , 2009, , . | | 10 |
| 64 | Using formal reasoning on a model of tasks for FreeRTOS. Formal Aspects of Computing, 2015, 27, 167-192. | 1.4 | 10 |
| 65 | What can agile methods bring to high-integrity software development?. Communications of the ACM, 2017, 60, 38-41. | 3.3 | 10 |
| 66 | Pointers and Records in the Unifying Theories of Programming. Lecture Notes in Computer Science, 2006, , 200-216. | 1.0 | 10 |
| 67 | The Tokeneer Experiments. , 2010, , 405-430. | | 10 |
| 68 | Checking SysML Models for Co-simulation. Lecture Notes in Computer Science, 2016, , 450-465. | 1.0 | 10 |
| 69 | The Miracle of Reactive Programming. Lecture Notes in Computer Science, 2010, , 202-217. | 1.0 | 10 |
| 70 | Industrial Deployment of Formal Methods: Trends and Challenges. , 2013, , 123-143. | | 10 |
| 71 | Formal development of industrial-scale systems in Circus. Innovations in Systems and Software Engineering, 2005, 1, 125-146. | 1.6 | 9 |
| 72 | Verifying the CICS File Control API with Z/Eves: An experiment in the verified software repository. Science of Computer Programming, 2009, 74, 197-218. | 1.5 | 9 |

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| 73 | A Comparison of State-Based Modelling Tools for Model Validation. Lecture Notes in Business Information Processing, 2008, , 278-296. | 0.8 | 9 |
| 74 | UTP Semantics for Handel-C. Lecture Notes in Computer Science, 2010, , 142-160. | 1.0 | 9 |
| 75 | Engineering UToPiA. Lecture Notes in Computer Science, 2014, , 22-41. | 1.0 | 9 |
| 76 | Adapting FreeRTOS for multicores: an experience report. Software - Practice and Experience, 2014, 44, 1129-1154. | 2.5 | 8 |
| 77 | Z/Eves and the Mondex Electronic Purse. Lecture Notes in Computer Science, 2006, , 15-34. | 1.0 | 8 |
| 78 | Mechanising a Unifying Theory. Lecture Notes in Computer Science, 2006, , 217-235. | 1.0 | 8 |
| 79 | Timed Circus: Timed CSP with the Miracle. , 2011, , . | | 7 |
| 80 | Behavioural Models for FMI Co-simulations. Lecture Notes in Computer Science, 2016, , 255-273. | 1.0 | 7 |
| 81 | Procedures and Recursion in the Refinement Calculus. Journal of the Brazilian Computer Society, 1998, 5, 00-00. | 0.8 | 7 |
| 82 | Probabilistic Semantics for RoboChart. Lecture Notes in Computer Science, 2019, , 80-105. | 1.0 | 7 |
| 83 | State-rich model checking. Innovations in Systems and Software Engineering, 2006, 2, 49-64. | 1.6 | 6 |
| 84 | State Visibility and Communication in Unifying Theories of Programming. , 2009, , . | | 6 |
| 85 | A Timed Model of Circus with the Reactive Design Miracle. , 2010, , . | | 6 |
| 86 | Using Model Transformation to Generate Graphical Counter-Examples for the Formal Analysis of xUML Models. , 2011, , . | | 6 |
| 87 | Taking Our Own Medicine: Applying the Refinement Calculus to State-Rich Refinement Model Checking. Lecture Notes in Computer Science, 2006, , 697-716. | 1.0 | 6 |
| 88 | A Denotational Semantics for Handel-C Hardware Compilation. Lecture Notes in Computer Science, 2007, , 266-285. | 1.0 | 6 |
| 89 | Simulink Timed Models for Program Verification. Lecture Notes in Computer Science, 2013, , 82-99. | 1.0 | 6 |
| 90 | Calculational Verification of Reactive Programs with Reactive Relations and Kleene Algebra. Lecture Notes in Computer Science, 2018, , 205-224. | 1.0 | 6 |

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| 91 | A Hardware Compiler Semantics for Handel-C. <i>Electronic Notes in Theoretical Computer Science</i> , 2006, 161, 73-90. | 0.9 | 5 |
| 92 | Linking VDM and Z. , 2008, , . | | 5 |
| 93 | Towards Verification of Cyber-Physical Systems with UTP and Isabelle/HOL. <i>Lecture Notes in Computer Science</i> , 2017, , 39-64. | 1.0 | 5 |
| 94 | Automatic Generation of Verified Concurrent Hardware. <i>Lecture Notes in Computer Science</i> , 2007, , 286-306. | 1.0 | 5 |
| 95 | Event refinement in state-based concurrent systems. <i>Formal Aspects of Computing</i> , 1995, 7, 266-288. | 1.4 | 4 |
| 96 | Mechanised wire-wise verification of Handel-C synthesis. <i>Science of Computer Programming</i> , 2012, 77, 424-443. | 1.5 | 4 |
| 97 | Refinement-Based Verification of the FreeRTOS Scheduler in VCC. <i>Lecture Notes in Computer Science</i> , 2015, , 170-186. | 1.0 | 4 |
| 98 | Model checking of state-rich formalism by linking to CSP, Verilog and B. <i>International Journal on Software Tools for Technology Transfer</i> , 2017, 19, 73-96. | 1.7 | 4 |
| 99 | From Formalised State Machines to Implementations of Robotic Controllers. <i>Springer Proceedings in Advanced Robotics</i> , 2018, , 517-529. | 0.9 | 4 |
| 100 | Verification of Co-simulation Algorithms Subject to Algebraic Loops and Adaptive Steps. <i>Lecture Notes in Computer Science</i> , 2021, , 3-20. | 1.0 | 4 |
| 101 | RiskStructures: A design algebra for risk-aware machines. <i>Formal Aspects of Computing</i> , 2021, 33, 763-802. | 1.4 | 4 |
| 102 | CSP and Kripke Structures. <i>Lecture Notes in Computer Science</i> , 2015, , 505-523. | 1.0 | 4 |
| 103 | Towards the formal specification of a simple programming support environment. <i>Software Engineering Journal</i> , 1987, 2, 86. | 0.7 | 4 |
| 104 | Heterogeneous Semantics and Unifying Theories. <i>Lecture Notes in Computer Science</i> , 2016, , 374-394. | 1.0 | 4 |
| 105 | An Operational Semantics for Handel-C1 ¹ Handel-C is the registered trademark of Celoxica Ltd (www.celoxica.com). <i>Electronic Notes in Theoretical Computer Science</i> , 2003, 80, 235-250. | 0.9 | 3 |
| 106 | Angelic Nondeterminism and Unifying Theories of Programming. <i>Electronic Notes in Theoretical Computer Science</i> , 2005, 137, 45-66. | 0.9 | 3 |
| 107 | FDR Explorer. <i>Formal Aspects of Computing</i> , 2009, 21, 133-154. | 1.4 | 3 |
| 108 | Correct hardware synthesis. <i>Acta Informatica</i> , 2011, 48, 363-396. | 0.5 | 3 |

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| 109 | An approach for managing semantic heterogeneity in Systems of Systems Engineering. , 2014, , . | | 3 |
| 110 | Mobile CSP. Lecture Notes in Computer Science, 2016, , 39-55. | 1.0 | 3 |
| 111 | Proving Theorems About JML Classes. , 2007, , 255-279. | | 3 |
| 112 | Automated Reasoning for Probabilistic Sequential Programs with Theorem Proving. Lecture Notes in Computer Science, 2021, , 465-482. | 1.0 | 3 |
| 113 | Hoare and Hea€™s Unifying Theories of Programming. , 2021, , 285-316. | | 3 |
| 114 | Unifying Theories of Undefinedness in UTP. Lecture Notes in Computer Science, 2013, , 1-22. | 1.0 | 3 |
| 115 | Unifying Theories of Logic and Specification. Lecture Notes in Computer Science, 2013, , 18-33. | 1.0 | 3 |
| 116 | Compositional Assume-Guarantee Reasoning of Control Law Diagrams Using UTP. Emergence, Complexity and Computation, 2020, , 215-254. | 0.2 | 3 |
| 117 | The First World Congress on Formal Methods in the Development of Computing Systems. Formal Aspects of Computing, 2000, 12, 145-146. | 1.4 | 2 |
| 118 | FDR Explorer. Electronic Notes in Theoretical Computer Science, 2007, 187, 19-34. | 0.9 | 2 |
| 119 | Automation of Model-Based Testing through Model Transformations. , 2009, , . | | 2 |
| 120 | Modelling temporal behaviour in complex systems with Timebands. Formal Methods in System Design, 2013, 43, 520-551. | 0.9 | 2 |
| 121 | Automated verification of reactive and concurrent programs by calculation. Journal of Logical and Algebraic Methods in Programming, 2021, 121, 100681. | 0.4 | 2 |
| 122 | Java in the Safety-Critical Domain. Lecture Notes in Computer Science, 2017, , 110-150. | 1.0 | 2 |
| 123 | The Use of Model Transformation in the INESS Project. Lecture Notes in Computer Science, 2010, , 147-165. | 1.0 | 2 |
| 124 | A Verified Protocol to Implement Multi-way Synchronisation and Interleaving in CSP. Lecture Notes in Computer Science, 2013, , 46-60. | 1.0 | 2 |
| 125 | Contracts in CML. Lecture Notes in Computer Science, 2014, , 54-73. | 1.0 | 2 |
| 126 | Three Approaches to Timed External Choice in UTP. Lecture Notes in Computer Science, 2015, , 1-20. | 1.0 | 2 |

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| 127 | A Calculus of Space, Time, and Causality: Its Algebra, Geometry, Logic. Lecture Notes in Computer Science, 2019, , 3-21. | 1.0 | 2 |
| 128 | Observations for Assertion-based Scenarios in the context of Model Validation and Extension to Test Case Generation. , 2008, , . | | 1 |
| 129 | Mechanised Wire-wise Verification of Handel-C Synthesis. Electronic Notes in Theoretical Computer Science, 2009, 240, 201-219. | 0.9 | 1 |
| 130 | Modelling and Implementing Complex Systems with Timebands. , 2010, , . | | 1 |
| 131 | Test-data generation for control coverage by proof. Formal Aspects of Computing, 2014, 26, 795-823. | 1.4 | 1 |
| 132 | Sound Simulation and Co-simulation for Robotics. , 2017, , 173-194. | | 1 |
| 133 | Modelling Temporal Behaviour in Complex Systems with Timebands. , 2012, , 277-307. | | 1 |
| 134 | UTP Semantics of Reactive Processes with Continuations. Lecture Notes in Computer Science, 2017, , 114-133. | 1.0 | 1 |
| 135 | Evaluation of OCL for Large-Scale Modelling: A Different View of the Mondex Purse. Lecture Notes in Computer Science, 2007, , 194-205. | 1.0 | 1 |
| 136 | UTP by Example: Designs. Lecture Notes in Computer Science, 2017, , 16-50. | 1.0 | 1 |
| 137 | A Stepwise Approach to Linking Theories. Lecture Notes in Computer Science, 2017, , 134-154. | 1.0 | 1 |
| 138 | RoboStar Technology: Modelling Uncertainty in RoboChart Using Probability. , 2021, , 413-465. | | 1 |
| 139 | Development Automation of Real-Time Java. Transactions on Embedded Computing Systems, 2020, 19, 1-26. | 2.1 | 1 |
| 140 | Title is missing!. Formal Methods in System Design, 2000, 17, 199-200. | 0.9 | 0 |
| 141 | Verifying the CICS File Control API with Z/Eves: An Experiment in the Verified Software Repository. , 2007, , . | | 0 |
| 142 | Programming Phase: Formal Methods. , 2010, , 772-785. | | 0 |
| 143 | A Plug-in Based Approach for UML Model Simulation. Lecture Notes in Computer Science, 2012, , 328-339. | 1.0 | 0 |
| 144 | Software engineering research directions. ACM Computing Surveys, 1996, 28, 128. | 16.1 | 0 |

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| 145 | ABZ2008 VSR-Net Workshop. Lecture Notes in Computer Science, 0, , 378-379. | 1.0 | 0 |