

Associate Professor HUANG, RUBING

School of Computer Science and Engineering, Faculty of Innovation Engineering
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Academic Qualification

Ph.D., Huazhong University of Science and Technology, Wuhan, China, 2013
M.S., Huazhong University of Science and Technology, Wuhan, China (Pursuing Ph.D. in advance), 2009
B.Eng., Zhengzhou University of Light Industry, Zhengzhou, China, 2007

Teaching Area

Undergraduate Courses:
CS014 Software Engineering
CS250 Software Engineering
CS103 Software Engineering Practices
SE350 Formal Methods in Software Specification
SE110 Computer Programming
SE111 Object-Oriented Programming
CS480 Topics in Computer Science
GIT001 Information Technology

Research Area

AI for Software Engineering
Software Engineering for AI
Software Testing
Testing of Complex Software Systems (such as IoT systems, intelligent systems, and autonomous driving systems)
Software Debugging
Software Maintenance

Working Experience

Jan. 2021 to present: Associate Professor, Faculty of Information Technology, Macau University of Science and Technology
Sep. 2016 to Dec. 2020: Associate Professor, School of Computer Science and Communication Engineering, Jiangsu University, China
Nov. 2017 to Nov. 2018: Visiting Scholar, Faculty of Information Technology, Monash University, Australia
Jul. 2016 to Oct. 2016: Visiting Scholar, Department of Computer Science and Software Engineering, Swinburne University of Technology, Australia
Dec. 2013 to Aug. 2016: Assistant Professor, School of Computer Science and Communication Engineering, Jiangsu University, China

Academic Publications (Selected)

1. Rubing Huang*, Weifeng Sun, Yinyin Xu, Haibo Chen, Dave Towey, Xin Xia, A Survey on Adaptive Random Testing, IEEE Transactions on Software Engineering (TSE), vol. 47, no. 10, pp: 2052–2083, 2021. (Invited to be presented at the Journal First Session of ICSE 2020)

2. Rubing Huang*, Chenhui Cui, Dave Towey, Weifeng Sun, Junlong Lian, VPP-ART: An Efficient Implementation of Fixed-Size-Candidate-Set Adaptive Random Testing Using Vantage Point Partitioning, IEEE Transactions on Reliability (TRel), to be published, 2023.
3. Rubing Huang*, Dave Towey, Yinyin Xu, Yunan Zhou, Ning Yang, Dissimilarity-based Test Case Prioritization through Data Fusion, Software: Practice and Experience (SPE), vol. 52, no. 6, pp: 1352-1377, 2022.
4. Rubing Huang, Weifeng Sun, Haibo Chen, Chenhui Cui, Ning Yang, A Nearest-Neighbor Divide-and-Conquer Approach for Adaptive Random Testing, Science of Computer Programming (SCP), vol. 215, pp: 102743, 2022.
5. Rubing Huang, Haibo Chen, Weifeng Sun, Dave Towey, Candidate Test Set Reduction for Adaptive Random Testing: An Overheads Reduction Technique, Science of Computer Programming (SCP), vol. 214, pp: 102730, 2022. (Invited to be presented at the Journal First Session of SANER 2023)
6. Muhammad Ashfaq, Rubing Huang*, Dave Towey, Michael Omari, Dmitry Yashunin, Patrick Kwaku Kudjo, Tao Zhang, SWFC-ART: A Cost-effective Approach for Fixed-Size-Candidate-Set Adaptive Random Testing through Small World Graphs, Journal of Systems and Software (JSS), vol. 180, pp: 111008, 2021.
7. Rubing Huang*, Haibo Chen, Yunan Zhou, Tsong Yueh Chen, Dave Towey, Man Fai Lau, Sebastian Ng, Robert Merkel, Jinfu Chen, Covering Array Constructors: An Experimental Analysis of Their Interaction Coverage and Fault Detection, The Computer Journal, vol. 54, no. 5, pp: 762-788, 2021.
8. Rubing Huang*, Weifeng Sun, Tsong Yueh Chen, Sebastian Ng, Jinfu Chen, Identification of Failure Regions for Programs with Numeric Inputs, IEEE Transactions on Emerging Topics in Computational Intelligence (TETCI), vol. 5, no. 4, pp: 651-667, 2021.
9. Rubing Huang*, Quanjun Zhang, Dave Towey, Weifeng Sun, Jinfu Chen, Regression Test Case Prioritization by Code Combinations Coverage, Journal of Systems and Software (JSS), vol. 169, pp: 110712, 2020.
10. Muhammad Ashfaq, Rubing Huang*, Michael Omari, FSCS-SIMD: An efficient implementation of Fixed-Size-Candidate-Set adaptive random testing using SIMD instructions, The 31st IEEE International Symposium on Software Reliability Engineering (ISSRE'20), October 12-15, pp. 277-288, Coimbra, Portugal, 2020.
11. Rubing Huang*, Weifeng Sun, Tsong Yueh Chen, Dave Towey, Jinfu Chen, Weiwen Zong, Yunan Zhou, Abstract Test Case Prioritization using Repeated Small-strength Level-combination Coverage, IEEE Transactions on Reliability (TRel), vol. 69, no. 1, pp: 349-372, 2020.
12. Rubing Huang*, Weiwen Zong, Tsong Yueh Chen, Dave Towey, Yunan Zhou, Jinfu Chen, Prioritising Abstract Test Cases: An Empirical Study, IET Software, vol. 13, no. 4, pp: 313-326,
13. Rubing Huang*, Yunan Zhou, Tsong Yueh Chen, Dave Towey, Jinfu Chen, Poster: An Experimental Analysis of Fault Detection Capabilities of Covering Array Constructors, The 40th ACM/IEEE International Conference on Software Engineering (ICSE'18), May 27-June 3, pp. 246-247, Gothenburg, Sweden, 2018.
14. Rubing Huang*, Yunan Zhou, Dave Towey, Weiwen Zong, Jinfu Chen, An Empirical Examination of Abstract Test Case Prioritization Techniques, The 39th ACM/IEEE International Conference on Software Engineering (ICSE'17), May 20-28, pp. 141-143, Buenos Aires, Argentina,
15. Rubing Huang, Huai Liu, Xiaodong Xie, Jinfu Chen, Enhancing Mirror Adaptive Random Testing through Dynamic Partitioning, Information and Software Technology (IST), vol. 67, pp: 13-29, 2015.
16. Rubing Huang*, Jinfu Chen, Dave Towey, Alvin T. S. Chan, Yansheng Lu, Aggregate-Strength Interaction Test Suite Prioritization, Journal of Systems and Software (JSS), vol. 99, pp: 36-51,

Professional Society Membership

Senior Member of IEEE

Senior Member of CCF

Committee Member of CCF Software Engineering

Personal Website

<https://huangrubing.github.io/>