Chris POSKITT

School of Computing and Information Systems
Singapore Management University (SMU)
80 Stamford Road
Singapore 178902

Email: cposkitt@smu.edu.sg

Summary Statement

Chris Poskitt is an Associate Professor of Computer Science (Education) at Singapore Management University (SMU), where he is a member of the Centre for Research on Intelligent Software Engineering. Prior to SMU, he held research and teaching positions at ETH Zurich, Switzerland, and the Singapore University of Technology and Design. His research broadly addresses the problem of engineering correct and secure software/systems, towards which he has co-developed techniques for testing/defending cyber-physical systems, tools for analysing execution models of concurrency APIs, and logics for reasoning about the correctness of graph-rewriting programs. His research interests span software engineering, formal methods, cybersecurity, and computer science education.

Education

PhD, University of York, Great Britain, 2014

Bachelor of Science, University of York, Great Britain, 2009

Academic Appointments

Associate Professor of Computer Science (Education), School of Computing and Information Systems, SMU, Jul 2023 - Present

Assistant Professor of Computer Science (Education), School of Computing and Information Systems, SMU, Apr 2021 - Jun 2023

Assistant Professor of Information Systems (Education), School of Computing and Information Systems, SMU, Jan 2020 - Mar 2021

Lecturer & Research Fellow, Singapore University of Technology and Design, Singapore, Jan 2018 - Jan 2020

Research Fellow, Singapore University of Technology and Design, Singapore, Mar 2016 - Jan 2018

Postdoctoral Research Scientist, ETH Zurich, Switzerland, Jan 2013 - Jan 2016

Academic Administrative Positions

Core Curriculum Committee, College of Integrative Studies, SMU, Jun 2024 - Present

Director, Undergraduate Administration, School of Computing and Information Systems, SMU, Jan 2023 - Present

Director, BSc (IS) Smart-City Management & Technology Major, School of Computing and Information Systems, SMU, Jan 2022 - Jun 2025

Awards and Honors

Distinguished Reviewer Award, 47th International Conference on Software Engineering (ICSE'25), 2025

JCST Outstanding Reviewer Award, Journal of Computer Science and Technology, 2023

Most Promising Teacher Award, Singapore Management University, 2023

Nominated for the Innovative Teacher Award, Singapore Management University, 2022

Nominated for Best Paper Award, 27th Annual ACM Conference on Innovation and Technology in Computer Science Education (ITiCSE 2022), 2022

Vice-Chancellor's Teaching Award, University of York, 2011

Professional Memberships

Member, ACM Special Interest Group on Software Engineering, 2022

Member, ACM, 2021

Member, Formal Methods Europe, 2015

Associate Fellow of the Higher Education Academy (AFHEA), Higher Education Academy, UK, 2011

RESEARCH

Research and Project Areas

Software Engineering
Formal Methods
Cybersecurity
Computer Science Education

Publications

Journal Articles [Refereed]

Causality-Driven Test Case Minimisation for Cyber-Physical Systems, by FOSTER, Michael; POSKITT, Christopher M.; LATIMER, Nicholas R.; WALKINSHAW, Neil; SOMERS, Richard; HIERONS, Robert M.. (2026). *ACM Transactions on Software Engineering and Methodology,* (Accepted)

Security modelling for cyber-physical systems: A systematic literature review, by HUANG, Shaofei; POSKITT, Christopher M.; SHAR, Lwin Khin. (2026). *ACM Transactions on Cyber-Physical Systems, 10* (2), 20:1-20:29. https://doi.org/10.1145/3776549 (Published)

Boosting adversarial training in safety-critical systems through boundary data selection, by JIA, Yifan; POSKITT, Christopher M.; ZHANG, Peixin; WANG, Jingyi; SUN, Jun; CHATTOPADHYAY, Sudipta. (2023). *IEEE Robotics and Automation Letters, 8* (12), 8350-8357. https://doi.org/10.1109/LRA.2023.3327934 (Published)

Constructing cyber-physical system testing suites using active sensor fuzzing, by ZHANG, Fan; WU, Qianmei; XUAN, Bohan; CHEN, Yuqi; LIN, Wei; POSKITT, Christopher M.; SUN, Jun; CHEN, Binbin. (2023). *IEEE Transactions on Software Engineering, 49* (11), 4829-4845.

https://doi.org/10.1109/TSE.2023.3309330 (Published)

K-ST: A formal executable semantics of the structured text language for PLCs, by WANG, Kun; WANG, Jingyi; POSKITT, Christopher M.; CHEN, Xiangxiang; SUN, Jun; CHENG, Peng. (2023). *IEEE Transactions on Software Engineering, 49* (10), 4796-4813. https://doi.org/10.1109/TSE.2023.3315292 (Published)

Mitigating Adversarial Attacks on Data-Driven Invariant Checkers for Cyber-Physical Systems, by MAITI, Rajib Ranjan; YOONG, Cheah Huei; PALLETI, Venkata Reddy; SILVA, Arlindo; POSKITT, Christopher M.. (2023). *IEEE Transactions on Dependable and Secure Computing, 20* (4), 3378-3391. https://doi.org/10.1109/tdsc.2022.3194089 (Published)

Specification-Based Autonomous Driving System Testing, by ZHOU, Yuan; SUN, Yang; TANG, Yun; CHEN, Yuqi; SUN, Jun; POSKITT, Christopher M.; LIU, Yang; YANG, Zijiang. (2023). *IEEE Transactions on Software Engineering, 49* (6), 3391-3410. https://doi.org/10.1109/TSE.2023.3254142 (Published)

Monadic second-order incorrectness logic for GP 2, by POSKITT, Christopher M.; PLUMP, Detlef. (2023). *Journal of Logical and Algebraic Methods in Programming, 130* 1-30. http://doi.org/10.1016/j.jlamp.2022.100825 (Published)

Physical Adversarial Attack on a Robotic Arm, by JIA, Yifan; POSKITT, Christopher M.; SUN, Jun; CHATTOPADHYAY, Sudipta. (2022). *IEEE Robotics and Automation Letters, 7* (4), 9334-9341. https://doi.org/10.1109/LRA.2022.3189783 (Published)

Deriving invariant checkers for critical infrastructure using axiomatic design principles, by YOONG, Cheah Huei; PALLETI, Venkata Reddy; MAITI, Rajib Ranjan; SILVA, Arlindo; POSKITT, Christopher M.. (2021). *Cybersecurity, 4* (1), 1-24. https://doi.org/10.1186/s42400-021-00069-7 (Published)

Adversarial attacks and mitigation for anomaly detectors of cyber-physical systems, by JIA, Yifan; WANG, Jingyi; POSKITT, Christopher M.; CHATTOPADHYAY, Sudipta; SUN, Jun; CHEN, Yuqi. (2021). *International Journal of Critical Infrastructure Protection, 34* 1-13. https://doi.org/10.1016/j.ijcip.2021.100452 (Published)

A semantics comparison workbench for a concurrent, asynchronous, distributed programming language, by CORRODI, Claudio; HEUSSNER, Alexander; POSKITT, Christopher M.. (2018). *Formal Aspects of Computing, 30* (1), 163-192. https://doi.org/10.1007/s00165-017-0443-1 (Published)

SafeGPU: Contract- and library-based GPGPU for object-oriented languages, by KOLESNICHENKO, Alexey; POSKITT, Christopher M.; NANZ, Sebastian. (2017). *Computer Languages, Systems and Structures, 48* 68-88. https://doi.org/10.1016/j.cl.2016.08.002 (Published)

Hoare-Style Verification of Graph Programs, by POSKITT, Christopher M.; PLUMP, Detlef. (2012). *Fundamenta Informaticae, 118* (1-2), 135-175. https://doi.org/10.3233/FI-2012-708 (Published)

Editorials

Preface, special issue for the 16th International Conference on Graph Transformation (ICGT 2023), by FERNÁNDEZ, Maribel; POSKITT, Christopher M.. (2025). *Logical Methods in Computer Science,* 1-2. (Published)

Conference Proceedings

Rethinking Artifact Evaluation for Software Engineering in the Age of Generative AI, by TREUDE, Christoph; POSKITT, Christopher M.; HODA, Rashina. (2026.0). *2026 IEEE/ACM International Conference on Software Engineering: Future of Software Engineering (ICSE-FoSE),* (Accepted)

Natural Adversaries: Fuzzing Autonomous Vehicles with Realistic Roadside Object Placements, by SUN, Yang; WANG, Haoyu; POSKITT, Christopher M.; SUN, Jun. (2026.0). *Proc. 19th IEEE International Conference on Software Testing, Verification and Validation (ICST 2026),* New York City, United States: IEEE. (Accepted)

AgentSpec: Customizable runtime enforcement for safe and reliable LLM agents, by WANG, Haoyu; POSKITT, Christopher M.; SUN, Jun. (2026.0). *Proceedings of the IEEE/ACM International Conference on Software Engineering, ICSE 2026, Rio de Janeiro, Brazil, April 12-18,* (pp. 1-12) New York City: ACM. https://doi.org/10.48550/arXiv.2503.18666 (Published)

Simulated interactive debugging, by NOLLER, Yannic; CHANDRA, Erick; CHANDRASHEKAR, Srinidhi; CHOO, Kenny; JEGOUREL, Cyrille; KURNIAWAN, Oka; POSKITT, Christopher M.. (2025.0). *2025 IEEE/ACM International Conference on Automated Software Engineering (ASE): Seoul, November 16-20: Proceedings,* (pp. 3896-3901) New York: IEEE. https://doi.org/10.1109/ASE63991.2025.00338 (Published)

Designing for novice debuggers: A pilot study on an AI-assisted debugging tool, by KURNIAWAN, Oka; CHANDRA, Erick; POSKITT, Christopher M.; NOLLER, Yannic; CHOO, Kenny T.W.; JEGOUREL, Cyrille. (2025.0). *Proc. 25th Koli Calling International Conference on Computing Education Research (Koli Calling '25),* (pp. 1-7) New York: ACM. https://doi.org/10.1145/3769994.3769997 (Published)

Developing a strong CPS defender: An evolutionary approach, by HU, Qingyuan; POSKITT, Christopher M.; SUN, Jun; CHEN, Yuqi. (2025.0). *Proceedings of the 28th International Symposium on Research in Attacks, Intrusions and Defenses (RAID'25), Gold Coast, Australia, October 19-22 ,* (pp. 425-439) Piscataway, NJ: IEEE. https://doi.org/10.1109/RAID67961.2025.00028 (Published)

Runtime anomaly detection for drones: An integrated rule-mining and unsupervised learning approach, by TAN, Ivan; MINN, Wei; POSKITT, Christopher M.; SHAR, Lwin Khin; JIANG, Lingxiao. (2025.0). *Proceedings of the 29th International Conference on Engineering of Complex Computer Systems (ICECCS 2025), Hangzhou, China, July 2-4,* (pp. 3-23) Cham: Springer. https://doi.org/10.1007/978-3-032-00828-2_1 (Published)

Bot-driven development: From simple automation to autonomous software development bots, by TREUDE, Christoph; POSKITT, Christopher M.. (2025.0). *Proceedings of 2025 IEEE/ACM International Workshop on Bots in Software Engineering (BotSE), Ottawa, Canada, April 27,* (pp. 18-22) New York: IEEE. https://doi.org/10.1109/BotSE67031.2025.00012 (Published)

FixDrive: Automatically repairing autonomous vehicle driving behaviour for $0.08 per violation, by SUN, Yang; POSKITT, Christopher M.; WANG, Kun; SUN, Jun. (2025.0). *ICSE'25: Proceedings of the 47th IEEE/ACM International Conference on Software Engineering, Ottawa, Canada, April 26 - May 6,* (pp. 1921-1933) New York: IEEE. https://doi.org/10.1109/ICSE55347.2025.00216 (Published)

Towards automated slide augmentation to discover credible and relevant links, by DINUSHKA, Dilan; POSKITT, Christopher M.; KOH, Kwan Chin; MOK, Heng Ngee; LAUW, Hady W.. (2024.0). *Artificial Intelligence in Education: 25th International Conference, AIED 2024, Recife, Brazil, July 8-12,* (pp. 200-208) Cham: Springer. https://doi.org/10.1007/978-3-031-64312-5_24 (Published)

REDriver: Runtime enforcement for autonomous vehicles, by SUN, Yang; POSKITT, Christopher M.; ZHANG, Xiaodong; SUN, Jun. (2024.0). *ICSE '24: Proceedings of the 46th International Conference on Software Engineering, Lisbon, Portugal, April 14-20,* (pp. 1-12) New York: ACM. https://doi.org/10.1145/3597503.3639151 (Published)

ACAV: A framework for automatic causality analysis in autonomous vehicle accident recordings, by SUN, Huijia; POSKITT, Christopher M.; SUN, Yang; SUN, Jun; CHEN, Yuqi. (2024.0). *ICSE '24: Proceedings of the 46th International Conference on Software Engineering, Lisbon, Portugal, April 14-18,* (pp. 1-13) New York: ACM. https://doi.org/10.1145/3597503.3639175 (Published)

Fixing your own smells: Adding a mistake-based familiarization step when teaching code refactoring, by TAN, Ivan; POSKITT, Christopher M.. (2024.0). *SIGCSE 2024: Proceedings of the 55th ACM Technical Symposium on Computer Science Education, Portland, March 20-23,* (pp. 1307-1313) New York: ACM. https://doi.org/10.1145/3626252.3630856 (Published)

How helpful do novice programmers find the feedback of an automated repair tool?, by KURNIAWAN, Oka; POSKITT, Christopher M.; HOQUE, Ismam Al; LEE, Norman Tiong Seng; JÉGOUREL, Cyrille; SOCKALINGAM, Nachamma. (2023.0). *2023 IEEE International Conference on Teaching, Assessment and Learning for Engineering (TALE): Auckland, November 28 - December 1: Proceedings,* (pp. 1-6) Piscataway, NJ: IEEE. https://doi.org/10.1109/TALE56641.2023.10398393 (Published)

Finding causally different tests for an industrial control system, by POSKITT, Christopher M.; CHEN, Yuqi; SUN, Jun; JIANG, Yu. (2023.0). *ICSE '23: Proceedings of the 45th International Conference on Software Engineering, Melbourne, Australia, 2023 May 14-20,* (pp. 2578-2590) Melbourne, Australia: IEEE. https://doi.org/10.1109/ICSE48619.2023.00215 (Published)

LawBreaker: An approach for specifying traffic laws and fuzzing autonomous vehicles, by SUN, Yang; POSKITT, Christopher M.; SUN, Jun; CHEN, Yuqi; YANG, Zijiang. (2022.0). *ASE '22: Proceedings of the 37th IEEE/ACM International Conference on Automated Software Engineering, Rochester, MI, October 10-14,* (pp. 1-12) New York: ACM. https://doi.org/10.1145/3551349.3556897 (Published)

XSS for the masses: Integrating security in a web programming course using a security scanner, by SHAR, Lwin Khin; POSKITT, Christopher M.; SHIM, Kyong Jin; WONG, Li Ying Leonard. (2022.0). *ITiCSE 2022: Proceedings of the 27th ACM Conference on Innovation and Technology in Computer Science Education, Dublin, July 8-13,* (pp. 463-469) New York: ACM. https://doi.org/10.1145/3502718.3524795 (Published)

Steps before syntax: Helping novice programmers solve problems using the PCDIT framework, by KURNIAWAN, Oka; JEGOUREL, Cyrille; LEE, Norman Tiong Seng; DE MARI, Matthieu; POSKITT, Christopher M.. (2022.0). *2022 55th Hawaii International Conference on System Sciences (HICSS): January 4-7: Proceedings,* (pp. 982-991) Los Alamitos, CA: IEEE Computer Society. http://doi.org/10.24251/HICSS.2022.121 (Published)

Mind the gap: Reimagining an interactive programming course for the synchronous hybrid classroom, by POSKITT, Christopher. M.; SHIM, Kyong Jin; LAU, Yi Meng; ONG, Hong Seng. (2022.0). *Proceedings of the 55th Hawaii International Conference on System Sciences (HICSS-55), Virtual Conference, 2022 January 4-7,* (pp. 931-940) Virtual Conference: http://doi.org/10.24251/HICSS.2022.115 (Published)

Microservices Orchestration vs. Choreography: A decision framework, by MEGARGEL, Alan; POSKITT, Christopher M.; SHANKARARAMAN, Venky. (2021.0). *Proceedings of the 25th IEEE International Enterprise Distributed Object Computing Conference (EDOC 2021), Gold Coast, Australia, October 25-29,* (pp. 134-141) New York: IEEE. (Published)

Code integrity attestation for PLCs using black box neural network predictions, by CHEN, Yuqi; POSKITT, Christopher M.; SUN, Jun. (2021.0). *Proceedings of the 29th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2021), Athens Greece, August 23-28,* (pp. 32-44) New York: ACM. (Published)

Incorrectness logic for graph programs, by POSKITT, Christopher M.. (2021.0). *Proceedings of the 14th International Conference on Graph Transformation (ICGT 2021), Bergen Norway, June 24-25,* (pp. 81-101) Cham: Springer. (Published)

Towards systematically deriving defence mechanisms from functional requirements of cyber-physical systems, by YOONG, Cheah Huei; PALLETI, Venkata Reddy; SILVA, Arlindo; POSKITT, Christopher M.. (2020.0). *Proceedings of the 6th ACM Cyber-Physical System Security Workshop (CPSS 2020), Taipei, Taiwan, 2020 October 6,* (pp. 11-22) Taipei, Taiwan (Virtual): ACM. https://doi.org/10.1145/3384941.3409589 (Published)

Active fuzzing for testing and securing cyber-physical systems, by CHEN, Yuqi; XUAN, Bohan; POSKITT, Christopher M.; SUN, Jun; ZHANG, Fan. (2020.0). *ISSTA '20: Proceedings of the 29th ACM SIGSOFT International Symposium on Software Testing and Analysis, Virtual, July 18-22,* (pp. 14-26) New York: ACM. https://doi.org/10.1145/3395363.3397376 (Published)

Securing bring-your-own-device (BYOD) programming exams, by KURNIAWAN, Oka; LEE, Norman; POSKITT, Christopher M.. (2020.0). *SIGCSE 2020: Proceedings of the 51st ACM Technical Symposium on Computer Science Education, Portland, March 11-14,* (pp. 880-886) New York: ACM. https://doi.org/10.1145/3328778.3366907 (Published)

Learning-guided network fuzzing for testing cyber-physical system defences, by CHEN, Yuqi; POSKITT, Christopher M.; SUN, Jun; ADEPU, Sridhar; ZHANG, Fan. (2019.0). *Proceedings of the 34th IEEE/ACM International Conference on Automated Software Engineering (ASE 2019),* (pp. 962-973) San Diego, CA, USA: IEEE. https://doi.org/10.1109/ASE.2019.00093 (Published)

Learning from mutants: Using code mutation to learn and monitor invariants of a cyber-physical system, by CHEN, Yuqi; POSKITT, Christopher M.; SUN, Jun. (2018.0). *2018 39th IEEE Symposium on Security and Privacy (S&P 2018): San Francisco, May 21-23: Proceedings,* (pp. 648-660) Piscataway, NJ: IEEE. https://doi.org/10.1109/SP.2018.00016 (Published)

Anomaly detection for a water treatment system using unsupervised machine learning, by INOUE, Jun; YAMAGATA, Yoriyuki; CHEN, Yuqi; POSKITT, Christopher M.; SUN, Jun. (2017.0). *17th IEEE International Conference on Data Mining Workshops ICDMW 2017: 18-21 November, New Orleans, LA: Proceedings,* (pp. 1058-1065) Los Alamitos, CA: IEEE Computer Society. https://doi.org/10.1109/ICDMW.2017.149 (Published)

Towards learning and verifying invariants of cyber-physical systems by code mutation, by CHEN, Yuqi; POSKITT, Christopher M.; SUN, Jun. (2016.0). *Proceedings of the 21st International Symposium on Formal Methods (FM 2016), Limassol, Cyprus November 9-11,* (pp. 155-163) Limassol, Cyprus: Springer.

https://doi.org/10.1007/978-3-319-48989-6_10 (Published)

An interference-free programming model for network objects, by SCHILL, Mischael; POSKITT, Christopher M.; MEYER, Bertrand. (2016.0). *Proceedings of the 18th International Conference on Coordination Models and Languages (COORDINATION 2016), Heraklion, Crete, Greece, June 6-9,* (pp. 227-244) Heraklion, Crete, Greece: Springer. https://doi.org/10.1007/978-3-319-39519-7_14 (Published)

A graph-based semantics workbench for concurrent Asynchronous programs, by CORRODI, Claudio; HEUSSNER, Alexander; POSKITT, Christopher M.. (2016.0). *Proceedings of the 19th International Conference on Fundamental Approaches to Software Engineering (FASE 2016), Eindhoven, Netherlands, April 2-8,* (pp. 31-48) Eindhoven, Netherlands: Springer. https://doi.org/10.1007/978-3-662-49665-7_3 (Published)

Contract-Based General-Purpose GPU Programming, by KOLESNICHENKO, Alexey; POSKITT, Christopher M.; NANZ, Sebastian; MEYER, Bertrand. (2016.0). *Proceedings of the 2015 ACM SIGPLAN International Conference on Generative Programming: Concepts and Experiences, Pittsburgh PA, USA, October 26-27,* (pp. 75-84) Pittsburgh, PA, USA: ACM. https://doi.org/10.1145/2814204.2814216 (Published)

The AutoProof Verifier: Usability by non-experts and on standard code, by FURIA, Carlo A.; POSKITT, Christopher M.; TSCHANNEN, Julian. (2015.0). *Proceedings 2nd International Workshop on Formal Integrated Development Environment (F-IDE 2015): Oslo, Norway, June 22,* (pp. 42-55) Waterloo, NSW: Open Publishing Association. https://doi.org/10.4204/EPTCS.187.4 (Published)

Towards practical graph-based verification for an object-oriented concurrency model, by HEUSSNER, Alexander; POSKITT, Christopher M.; CORRODI, Claudio; MORANDI, Benjamin. (2015.0). *Proceedings of the 1st Graphs as Models (GaM) 2015 workshop, London, April 10-11,* (pp. 32-47) London, UK: https://doi.org/10.4204/EPTCS.181.3 (Published)

Towards rigorously faking bidirectional model transformations, by POSKITT, Christopher M.; DODDS, Mike; PAIGE, Richard F.; RENSINK, Arend. (2014.0). *Proceedings of the 3rd Workshop on the Analysis of Model Transformations (AMT 2014),* (pp. 70-75) Valencia, Spain: http://ceur-ws.org/Vol-1277/8.pdf (Published)

Verifying monadic second-order properties of graph programs, by POSKITT, Christopher M.; PLUMP, Detlef. (2014.0). *Graph transformation: 7th International Conference, ICGT 2014, York, July 22-24, Proceedings,* (pp. 33-48) Berlin: Springer. https://doi.org/10.1007/978-3-319-09108-2_3 (Published)

Using contracts to guide the search-based verification of concurrent programs, by POSKITT, Christopher M.; POULDING, Simon. (2013.0). *Search Based Software Engineering: 5th International Symposium, SSBSE 2013, St. Petersburg, Russia, August 24-26, Proceedings,* (pp. 263-268) Berlin: Springer. https://doi.org/10.1007/978-3-642-39742-4_22 (Published)

Applying search in an automatic contract-based testing tool, by KOLESNICHENKO, Alexey; POSKITT, Christopher M.; MEYER, Bertrand. (2013.0). *Search Based Software Engineering: 5th International Symposium, SSBSE 2013, St. Petersburg, Russia, August 24-26, Proceedings,* (pp. 318-323) Berlin: Springer. https://doi.org/10.1007/978-3-642-39742-4_31 (Published)

Verifying total correctness of graph programs, by POSKITT, Christopher M.; PLUMP, Detlef. (2012.0). *Selected revised papers from the 4th International Workshop on Graph Computation Models (GCM 2012): Bremen, Germany, September 28-29,* (pp. 1-20) Utrecht: EASST. https://doi.org/10.14279/tuj.eceasst.61.827 (Published)

Verification of graph programs, by POSKITT, Christopher M.. (2012.0). *Graph transformations: 6th International Conference, ICGT 2012, Bremen, Germany, September 24-29: Proceedings,* (pp. 420-422) Berlin: Springer. https://doi.org/10.1007/978-3-642-33654-6_30 (Published)

A Hoare calculus for graph programs, by POSKITT, Christopher M.; PLUMP, Detlef. (2010.0). *Graph Transformations: 5th International Conference, ICGT 2010, Enschede, the Netherlands, September 27-October 2, Proceedings,* (pp. 139-154) Berlin: Springer. https://doi.org/10.1007/978-3-642-15928-2_10 (Published)

Hoare logic for graph programs, by POSKITT, Christopher M.; PLUMP, Detlef. (2010.0). *VSTTE 2010 Workshop Proceedings: Edinburgh, August 16-19,* (pp. 1-11) Zurich: ETH. https://doi.org/10.3929/ethz-a-006860117 (Published)

Edited Conference Proceedings

Graph Transformation: 16th International Conference, ICGT 2023, Leicester, July 19-20: Proceedings, edited by FERNÁNDEZ, Maribel; POSKITT, Christopher M.. (12/07/2023). Lecture Notes in Computer Science, 13961. Cham: Springer. https://doi.org/10.1007/978-3-031-36709-0 (Published)

Post-Proceedings of the 13th International Workshop on Graph Computation Models (GCM 2022), edited by HECKEL, Reiko; POSKITT, Christopher M.. (22/12/2022). Electronic Proceedings in Theoretical Computer Science (EPTCS), Nantes, France: Open Publishing Association. https://doi.org/10.4204/EPTCS.374 (Published)

Proceedings of the 13th International Workshop on Graph Computation Models (GCM 2022), edited by HECKEL, Reiko; POSKITT, Christopher M.. (06/07/2022). Nantes, France: (Published)

Research Grants

Singapore Management University

Empowering Novice Programmers with an Interactive AI Chatbot and Gamified Hinting System, Tertiary Education Research Fund (TRF), Ministry of Education (MOE) , Co-PI (Project Level): Chris POSKITT, 2024, S$146,025

Slide++: Automatic Augmentation of Academic Slides Towards AI-Enabled Student-Centred Learning, Tertiary Education Research Fund (TRF), Ministry of Education (MOE) , PI (Project Level): Hady W. LAUW, 2022, S$262,196

Towards Practical Attestation Solutions for Countering Advanced Attacks to Industrial Control Systems, NSoE DeST-SCI Grant Call, National Satellite of Excellence in Design Science and Technology for Secure Critical Infrastructure (NSoE DeST-SCI), Singapore University of Technology and Design (SUTD) , Co-PI (Project Level): SUN Jun, 2019, S$939,180

A two-track approach to CPS Reconnaisance: causal-graphs and axiomatic design, NSoE DeST-SCI Grant Call, National Satellite of Excellence in Design Science and Technology for Secure Critical Infrastructure (NSoE DeST-SCI), Singapore University of Technology and Design (SUTD) , Co-PI (Project Level): Chris POSKITT, 2019, S$447,172

Other Institutions

CREDO: Comprehend, Refactor, and Decide with Orchestrated Agents - A Framework for Legacy System Evolution, SMU-SUTD Partnership Call, Ministry of Education (MOE) Tier 1 PI (Project Level): Christoph TREUDE, Ezekiel Soremekun, Co-PI (Project Level): Chris POSKITT, 2025, SGD125,000

Empowering Novice Programmers with an Interactive AI Chatbot and Gamified Hinting System, Tertiary Education Research Fund (TRF), Ministry of Education (MOE) Oka Kurniawan, Co-PI (Project Level): Chris POSKITT, Cyrille Jégourel, Nachamma Sockalingam, Kenny Choo, 2024, SGD146,025

AI Based Automated Feedback and Grading for Novice Programmers, Pedagogy Leadership Grant (PLG), Singapore University of Technology and Design Oka Kurniawan, Nachamma Sockalingam, Cyrille Pierre Joseph Jegourel, 2021, SGD99,648.96

Contracts and Search for Finding Faults (Conseff), Division II: Mathematics, Natural and Engineering Sciences, SNSF Bertrand MEYER, 2014, CHF329,378

TEACHING

Teaching Areas

Enterprise Solution Development
IT Solution Lifecycle Management
Software Project Management

Courses Taught

Singapore Management University

Undergraduate Programmes :

- Digital Business - Technologies and Transformation
- Enterprise Solution Development
- IT Solution Lifecycle Management
- Software Project Management

Postgraduate Professional Programmes :

- Capstone Project - Software and Cyber-Physical Systems

Postgraduate Research Programmes :

- Empirical Research Project I
- Empirical Research Project II
- Empirical Research Project III

Other Institutions

- Capstone, Undergraduate, Singapore University of Technology and Design
- Concepts of Concurrent Computation, Masters, ETH Zurich
- Digital World, Undergraduate, Singapore University of Technology and Design
- Mathematical Foundations of Computer Science, Undergraduate, University of York
- Seminar: Research Topics in Software Engineering, Masters, ETH Zurich
- Software Verification, Masters, ETH Zurich

Teaching Publications

Cases

Investigating Roemer's law: Would increased hospital capacity drive higher utilisation?, by KUMAR, Ashish; CHEAH, Sin Mei; POSKITT, Christopher M.; LAM, Sean Shao Wei. (2025). SMU-24-0033. (Published)

Digital transformation at Al Hilal Bank: From bricks and mortar to a fully functional digital bank, by DURAN, Randall E.; POSKITT, Christopher M.; ANG, Jovina. (2024). SMU-24-0020. (Published)

LGB Bank: Composite microservices in a large global bank (D), by MEGARGEL, Alan; POSKITT, Christopher M.. (2021). SMU-21-0037D. https://cmp.smu.edu.sg/case/5176 (Published)

LGB Bank: Composite microservices in a large global bank (A), by MEGARGEL, Alan; POSKITT, Christopher M.. (2021). SMU-21-0037A. https://cmp.smu.edu.sg/case/5176 (Published)

LGB Bank: Composite microservices in a large global bank (B), by MEGARGEL, Alan; POSKITT, Christopher M.. (2021). SMU-21-0037B. https://cmp.smu.edu.sg/case/5176 (Published)

LGB Bank: Composite microservices in a large global bank (C), by MEGARGEL, Alan; POSKITT, Christopher M.. (2021). SMU-21-0037C. https://cmp.smu.edu.sg/case/5176 (Published)

Teaching Notes

Investigating Roemer’s law: Would increased hospital capacity drive higher utilisation?, by KUMAR, Ashish; CHEAH, Sin Mei; POSKITT, Christopher M.; LAM, Sean Shao Wei. (2025). SMU-24-0033TN. (Published)

Digital transformation at Al Hilal Bank: From bricks and mortar to a fully functional digital bank, by LAU, Yi Meng; POSKITT, Christopher M.; DURAN, Randall E.; CHEAH, Sin Mei. (2024). SMU-24-0020TN. (Published)

LGB Bank: Composite microservices in a large global bank, by MEGARGEL, Alan; POSKITT, Christopher M.. (2021). SMU-21-0037TN. https://cmp.smu.edu.sg/case/5176 (Published)

THESES AND DISSERTATIONS

Theses and Dissertations Supervised

Other Institutions

Supervisor, "Modelling and Verifying an Object-Oriented Concurrency Model in GROOVE", Dissertation by Claudio CORRODI, ETH Zurich, 2015

Theses and Dissertations Assessed

Other Institutions

External Examiner, "Attacks and Defenses of Cyber Physical Systems", Thesis by Moshe Kravchik, PhD, Ben-Gurion University of the Negev, 2023

Expert Reviewer, "A Hybrid Scheme for Intrusion Detection in Cyber Physical Systems", Thesis by Muhammad Azmi Umer, PhD, Karachi Institute of Economics and Technology, 2022

Co Supervisor, "Automatic Defense and Analysis of Cyber-Physical Systems", Thesis by Yuqi CHEN, PhD, Singapore University of Technology and Design, 2019

Committee Member, "Learning Invariants and Assertions", Thesis by Pham Hong Long, PhD, Singapore University of Technology and Design, 2019

Co Supervisor, "Seamless Heterogeneous Computing: Combining GPGPU and Task Parallelism", Thesis by Alexey KOLESNICHENKO, PhD, ETH Zurich, 2016

OTHER ACADEMIC AND PROFESSIONAL ACTIVITIES

Invited Seminars, Talks and Lectures

From Breaking to Fixing: Fuzzing, Enforcing, and Repairing Autonomous Vehicles, 04 Feb 2026. Testing Lab Talk, University of Sheffield, Great Britain

From Breaking to Fixing: Enforcing and Repairing Autonomous Vehicle Compliance with Traffic Laws, 13 Jun 2025. PLSE Seminar, NUS, Singapore

Finding Causally Different Tests for an Industrial Control System, 22 Sep 2023. Sheffield Causality and Testing Workshop, University of Sheffield, Great Britain

Finding Causally Different Tests for an Industrial Control System, 15 Sep 2023. PLSE Seminar, NUS, Singapore

Facilitating Class Participation: Fighting the Wayang, 11 Aug 2023. The Teaching Exchange, SUTD, Singapore

Facilitating an effective mixed-mode class - Tips and strategies, 16 Oct 2020. SMU Centre for Teaching Excellence (CTE) Seminar, Singapore

Securing and Trusting Cyber-Physical Systems, 11 Feb 2019. CIS Department Seminar, Melbourne, Australia

Learning from Mutants: Using Code Mutation to Learn and Monitor Invariants of a Cyber-Physical System, 18 May 2018. Programming Systems Group Seminar, San Diego, United States of America

A Graph-Based Semantics Workbench for Concurrent Asynchronous Programs, 04 Nov 2015. Dagstuhl Seminar no. 15451: Verification of Evolving Graph Structures, Wadern, Germany

Hoare-Style Verification for GP 2, 03 Nov 2015. Dagstuhl Seminar no. 15451: Verification of Evolving Graph Structures, Wadern, Germany

UNIVERSITY SERVICE

Singapore Management University

Committee Member, EngD Thesis Evaluation Committee (Lux Anantharaman), Nov 2024 - Present

Committee Member, MPhil Thesis Evaluation Committee (Zilin Wang), Oct 2024 - Dec 2024

Committee Member, Faculty Senate, Apr 2023 - Mar 2025

Course Coordinator, IS212 Software Project Management, Apr 2022 - Present

Course Coordinator, CS302 IT Solution Lifecycle Management, Apr 2021 - Present

Committee Member, PhD Thesis Evaluation Committee (Mengdi Zhang), Feb 2021 - Jan 2024

Committee Member, SMU Futures Thinking Group: Imagining SMU 2035, Jun 2020 - Dec 2021

Other Institutions

Committee Member & Global Exchange Programme Representative, ISTD Undergraduate Committee, Singapore University of Technology and Design, Jan 2019 - Dec 2019

Committee Member, Niklaus Wirth 80th Birthday Symposium, ETH Zurich, Sep 2013 - Feb 2014

EXTERNAL SERVICE – PROFESSIONAL

PC Member, 49th International Conference on Software Engineering (ICSE 2027), 2027

PC Member, 27th International Conference on Formal Engineering Methods (ICFEM 2026), 2026

PC Member, 14th International Workshop on Computing with Terms and Graphs (TERMGRAPH 2026), 2026

PC Member, 2nd International Workshop on Software Engineering for Autonomous Driving Systems (SE4ADS 2026), 2026

Reviewer Journal Article, ACM Transactions on Software Engineering and Methodology; Empirical Software Engineering; IEEE Software; IEEE Transactions on Dependable and Secure Computing; IEEE Transactions on Software Engineering, 2026

PC Member, 34th ACM International Conference on the Foundations of Software Engineering (FSE 2026), 2026

PC Member, 35th ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA 2026), 2026

Session Chair, 47th International Conference on Software Engineering (ICSE 2025), 2025

PC Member, 26th International Conference on Formal Engineering Methods (ICFEM 2025), 2025

PC Member, 7th International Workshop on Artificial Intelligence and IoT Security (AIoTS 2025), 2025

Reviewer Journal Article, ACM Transactions on Software Engineering and Methodology; IEEE Transactions on Intelligent Transportation Systems; IEEE Transactions on Software Engineering; Information and Computation; Journal of Systems and Software; Logical Methods in Computer Science, 2025

PC Member, 34th ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA 2025), 2025

PC Member, 47th International Conference on Software Engineering (ICSE 2025), 2025

PC Member, 16th International Workshop on Graph Computation Models (GCM 2025), 2025

PC Member, 1st International Workshop on Software Engineering for Autonomous Driving Systems (SE4ADS 2025), 2024 - 2025

Session Chair, Large Model Safety Workshop 2024, 2024

PC Member, 6th ACNS Workshop on Security in Machine Learning and its Applications (SiMLA 2024), 2024

PC Member, 17th International Conference on Graph Transformation (ICGT 2024), 2024

Reviewer Conference Paper, ICRA 2024, 2024

Reviewer Journal Article, International Journal of Human-Computer Interaction; IEEE Transactions on Software Engineering, 2024

PC Member, 12th IEEE/ACM International Conference on Formal Methods in Software Engineering (FormaliSE'24), 2024

Session Chair, ATVA 2023, 2023

Web Chair, 2023 Federation of Conferences on Software Technologies: Applications and Foundations (STAF 2023), 2023

PC Co-Chair, 16th International Conference on Graph Transformation (ICGT 2023), 2023

Judge, ACM Student Research Competition (SRC), 45th International Conference on Software Engineering (ICSE 2023), 2023

PC Member, PhD Symposium @ 18th International Conference on integrated Formal Methods (iFM 2023), 2023

Reviewer Journal Article, Empirical Software Engineering; IEEE Transactions on Information Forensics and Security; IEEE Transactions on Software Engineering; Journal of Systems and Software; Software: Practice and Experience, 2023

PC Member, 2023 ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2023), 2023

Workshop Organizer, 12th International Workshop on Graph Computation Models (GCM 2022), 2022

PC Member, 4th ACNS Workshop on Security in Machine Learning and its Applications (SiMLA 2022), 2022

Reviewer Journal Article, ACM Computing Surveys; ACM Transactions on Software Engineering and Methodology; Automated Software Engineering; Empirical Software Engineering; IEEE Transactions on Dependable and Secure Computing; Journal of Computer Science and Technology, 2022

Reviewer Conference Paper, ITP 2022, 2022

PC Member, 4th International Workshop on Artificial Intelligence and Industrial Internet-of-Things Security (AIoTS 2022), 2022

Reviewer Conference Paper, SIGCSE 2021, 2021

Reviewer Journal Article, Cybersecurity; IEEE Transactions on Reliability; Journal of Computer Science and Technology; Journal of Software: Evolution and Process, 2021

PC Member, 3rd ACNS Workshop on Security in Machine Learning and its Applications (SiMLA 2021), 2021

PC Member, 12th Working Conference on Verified Software: Theories, Tools, and Experiments (VSTTE 2020), 2020

PC Member, 2nd International Workshop on Artificial Intelligence and Industrial Internet-of-Things Security (AIoTS 2020), 2020

PC Member, 1st IEEE/ACM International Conference on Automation of Software Test (AST 2020), 2020

Reviewer Conference Paper, ICFEM 2020, SIGCSE 2020, 2020

Reviewer Journal Article, Computers & Security; Cybersecurity; Journal of Logical and Algebraic Methods in Programming, 2020

PC Member, 10th International Workshop on Graph Computation Models (GCM 2019), 2019

PC Member, 1st International Workshop on Artificial Intelligence and Industrial Internet-of-Things Security (AIoTS 2019), 2019

PC Member, 12th International Conference on Graph Transformation (ICGT 2019), 2019

Reviewer Conference Paper, ATVA 2019, CONCUR 2019, and TASE 2019, 2019

PC Member, 4th ACM Workshop on Cyber-Physical Systems Security and PrivaCy (CPS-SPC 2018), 2018

PC Member, 14th International Conference on integrated Formal Methods (iFM 2018), 2018

Reviewer Journal Article, Computer Languages, Systems and Structures; Frontiers of Information Technology & Electronic Engineering, 2018

Reviewer Conference Paper, ESOP 2018, 2018

Reviewer Conference Paper, FormaliSE 2017, FMICS/AVOCS 2017, and ICECCS 2017, 2017

Reviewer Journal Article, Theoretical Computer Science, 2016

Reviewer Conference Paper, APSEC 2016, FSCD 2016, GCM 2016, and ICGT 2016, 2016

Reviewer Conference Paper, GCM 2015, ICGT 2015, 2015

Reviewer Journal Article, Empirical Software Engineering; Science of Computer Programming, 2014

Reviewer Conference Paper, AVoCS 2014, ICGT 2014, SAC-SOAP 2015, 2014

Reviewer Journal Article, Science of Computer Programming, 2013

Reviewer Conference Paper, GCM 2012, ICGT 2012, 2012

Reviewer Conference Paper, GCM 2010, ICGT 2010, 2010