UMANG MATHUR

EMAIL: umathur@nus.edu.sg **HOMEPAGE:** https://umangmathur.org/

EDUCATION

University of Illinois at Urbana-Champaign August 2015 – December 2021
PhD in Computer Science
Thesis: Algorithmic Advances in Dynamic Analysis for Detecting Concurrency Bugs

Indian Institute of Technology Bombay July 2010 – May 2014
B.Tech (Hons.) in Computer Science and Engineering
Minor in Physics

EMPLOYMENT

National University of Singapore August 2021 – present
Presidential Young Professor January 2023
Temasek-Presidential Young Professor June 2026

Simons Institute for the Theory of Computing, Berkeley January 2021 – May 2021
NTT Research Fellow

Facebook Inc., Bellevue, USA August 2020 – August 2021
Research Scientist

WorldQuant Research, India July 2014 – July 2015
Senior Quantitative Researcher

HONORS AND AWARDS

Robert Brown Promising Researcher Award, Ministry of Education	2026
Temasek-Presidential Young Professorship, NUS & Ministry of Defence, Singapore	2026
SIGPLAN Research Highlights and invitation to CACM Highlights for [40]	2025
Distinguished Paper Award at CPP 2024	2024
Presidential Young Professorship, NUS	2023
ACM SIGPLAN Distinguished Paper Award at POPL 2023	2023
Google South Asia & Southeast Asia Research Awards 2022 (USD 30,000)	2022
Best Paper Award at ASPLOS 2022	2022
Simons Institute Research Fellowship, sponsored by NTT Research	2021
Selected as a Young researcher in Computer Science to attend the 8^{th} Heidelberg Laureate Forum	2020
Google PhD Fellowship	2019
Mavis Future Faculty Fellowship, College of Engineering, UIUC	2019
C.W. Gear Outstanding Graduate Award, Department of Computer Science, UIUC	2019
ACM SIGSOFT Distinguished Paper Award at ESEC/FSE 2018	2018
Selected to represent India at the 11^{th} Asian Physics Olympiad, Taiwan	2010
Gold Medals at the Indian National Physics and Chemistry Olympiads	2010
Silver Medal at the 5^{th} International Junior Science Olympiad, South Korea	2008
KVPY fellowship, Government of India	2008
NTSE scholarship, Government of India	2008
SSTSE scholarship, State Government of Rajasthan, India	2008

RESEARCH GRANTS

Foundations for Testing and Verifying Concurrency in Go (PI) 2026
Ministry of Education, Singapore, Tier 2 Grant
SGD 1,373,553

Robert Brown Promising Researcher Award 2026
Ministry of Education, Singapore
SGD 130,000

Advancing the Foundations and Ecosystem for Safe and Secure Hardware Design (PI) 2026
Temasek-Presidential Young Professorship, Ministry of Defence, Singapore
SGD 500,000

Memory Safety Through Abstracted Program Translation (co-PI) 2026
Ministry of Education, Singapore, Tier 2 Grant
SGD 919,000 (co-PI share: 20%)

Efficient Distributed Monitoring Techniques for Concurrency Errors (PI) 2025
Merlion Programme, France–Singapore
EUR 10,000

Fuzz Testing (co-PI) 2023
National Research Foundation, Singapore
SGD 5,900,000 (co-PI share: 25%)

Architecting the Foundations of an Efficient Dynamic Concurrency Bug Detector (PI) 2023
Presidential Young Professorship, National University of Singapore
SGD 500,000

Tree Data Structures for Causal Orderings in Data Race Detection (PI) 2023
Start-up grant, National University of Singapore
SGD 250,000

Blazing Fast Dynamic Data Race Detection (PI) 2022
Google South & Southeast Asia Research Award
USD 30,000

INTERNSHIPS

Facebook, Inc., USA May 2019 – August 2019
Software Engineering Intern, "Interpretable Bug Isolation for App Crashes"

Google LLC, USA May 2018 – August 2018
Software Engineering Intern, "Improving Time Series Forecasting for Ads"

SRI International, USA May 2016 – August 2016
Research Intern, "Program Synthesis Via Proof Search"

LaBRI, France May 2013 – July 2013
Research Intern, "Non-Zeno strategies for Timed Games"

LSV, ENS Cachan, France May 2012 – July 2012
Research Intern, "Quantitative Verification of Probabilistic Recursive Programs"

PUBLICATIONS

65. **[POPL'27]** Michael Schwarz, Zhendong Ang, Umang Mathur. "Validating Concurrent Correctness Witnesses by Thread-Modular Abstract Interpretation." *Proceedings of the ACM on Programming Languages (POPL)*, 2027 (to appear).

64. **[POPL'27]** Aditya Ranjan Jha, Jason Zhijingcheng Yu, Umang Mathur, Prateek Saxena. "A Type System for Communication Safe Hardware Design." *Proceedings of the ACM on Programming Languages (POPL)*, 2027 (to appear).

63. **[POPL'27]** Alexis de Colnet, Kuldeep S. Meel, Umang Mathur. "Approximate Counting for Symbolic Automata." *Proceedings of the ACM on Programming Languages (POPL)*, 2027 (to appear).

62. **[ATC'26]** Alexey Paznikov, Michael Schwarz, Andrey Kogutenko, Yaroslav Osipov, Umang Mathur. "Instrumentation Optimization for Practical Dynamic Race Detection." *ACM SIGOPS Annual Technical Conference (ATC)*, 2026.

61. **[CACM'26]** Minjian Zhang, Mosaad Al Thokair, Umang Mathur, Mahesh Viswanathan. "Dynamic Race Detection with O(1) Samples." *Communications of the ACM*, 2026.
CACM Research Highlights

60. **[PLDI'26]** Zheng Han Lee, Umang Mathur. "Fixed Parameter Tractable Linearizability Monitoring." *Proceedings of the ACM on Programming Languages (PLDI)*, 2026.

59. **[PLDI'26]** A. R. Balasubramanian, Mohammad Hossein Khoshechin Jorshari, Rupak Majumdar, Umang Mathur, Minjian Zhang. "State Space Estimation for DPOR-based Model Checkers." *Proceedings of the ACM on Programming Languages (PLDI)*, 2026.

58. **[ASPLOS'26]** Jason Zhijingcheng Yu, Aditya Ranjan Jha, Umang Mathur, Trevor E. Carlson, Prateek Saxena. "Anvil: A General-Purpose Timing-Safe Hardware Description Language." *Proceedings of the* 31^{st} *International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, 2026.

57. **[POPL'26]** Zheng Shi, Lasse Møldrup, Umang Mathur, Andreas Pavlogiannis. "The Complexity of Testing Message-Passing Concurrency." *Proceedings of the ACM on Programming Languages (POPL)*, 2026. [arXiv]

56. **[POPL'26]** Alexis de Colnet ⓡ Kuldeep S. Meel ⓡ Umang Mathur. "Counting and Sampling Traces in Regular Languages." *Proceedings of the ACM on Programming Languages (POPL)*, 2026.

55. **[OOPSLA'25]** Zheng Han Lee, Umang Mathur. "Efficient Decrease-And-Conquer Linearizability Monitoring." *Proceedings of the ACM on Programming Languages (OOPSLA)*, 2025. [arXiv]

54. **[PLDI'25]** Bo Wang, Tianyu Li, Ruishi Li, Umang Mathur, Prateek Saxena. "Program Skeletons for Automated Program Translation." *Proceedings of the ACM on Programming Languages (PLDI)*, 2025. [arXiv]

53. **[PLDI'25]** Minjian Zhang, Daniel Wee Soong Lim, Mosaad Al Thokair, Umang Mathur, Mahesh Viswanathan. "Efficient Timestamping for Sampling-based Race Detection." *Proceedings of the ACM on Programming Languages (PLDI)*, 2025. [arXiv]

52. **[ASPLOS'25]** Huan Zhao, Dylan Wolff, Umang Mathur, Abhik Roychoudhury. "Selectively Uniform Concurrency Testing." *Proceedings of the* 30^{th} *International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, 2025.

51. **[POPL'25]** Umang Mathur, David Mestel, Mahesh Viswanathan. "The Decision Problem for Regular First-Order Theories." *Proceedings of the ACM on Programming Languages (POPL)*, 2025. [arXiv]

50. **[CAV'24]** Zhendong Ang, Umang Mathur. "Predictive Monitoring with Strong Trace Prefixes." *Proceedings of the* 36^{th} *International Conference on Computer Aided Verification (CAV)*, 2024.

49. **[PODS'24]** Kuldeep S. Meel ⓡ Sourav Chakraborty ⓡ Umang Mathur. "A faster FPRAS for #NFA." *Proceedings of the* 43^{rd} *Symposium on Principles of Database Systems (PODS)*, 2024. [arXiv]

48. **[CPP'24]** Qiyuan Zhao, George Pîrlea, Zhendong Ang, Umang Mathur, Ilya Sergey. "Rooting for Efficiency: Mechanised Reasoning about Array-Based Trees in Separation Logic." *Proceedings of the* 13^{th} *International Conference on Certified Programs and Proofs (CPP)*, 2024. [pdf]
Distinguished Paper Award

47. **[ASPLOS'24]** Dylan Wolff, Zheng Shi, Gregory J. Duck, Umang Mathur, Abhik Roychoudhury. "Greybox Fuzzing for Concurrency Testing." *Proceedings of the* 29^{th} *International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, 2024. [pdf]

46. **[ICSE'24]** Zheng Shi, Umang Mathur, Andreas Pavlogiannis. "Optimistic Prediction of Synchronization-Reversal Data Races." *Proceedings of the* 46^{th} *International Conference on Software Engineering (ICSE)*, 2024. [arXiv]

45. **[POPL'24]** Azadeh Farzan, Umang Mathur. "Coarser Equivalences for Causal Concurrency." *Proceedings of the ACM on Programming Languages (POPL)*, 2024. [arXiv]

44. **[POPL'24]** Soham Chakraborty, S. Krishna, Umang Mathur, Andreas Pavlogiannis. "How Hard is Weak-Memory Testing?" *Proceedings of the ACM on Programming Languages (POPL)*, 2024. [arXiv]

43. **[POPL'24]** Zhendong Ang, Umang Mathur. "Predictive Monitoring against Pattern Regular Languages." *Proceedings of the ACM on Programming Languages (POPL)*, 2024. [arXiv]

42. **[PLDI'23]** Hünkar Can Tunç, Parosh A. Abdulla, Soham Chakraborty, S. Krishna, Umang Mathur, Andreas Pavlogiannis. "Optimal Reads-From Consistency Checking for C11-Style Memory Models." *Proceedings of the ACM on Programming Languages (PLDI)*, 2023. [arXiv]

41. **[PLDI'23]** Hünkar Can Tunç, Umang Mathur, Andreas Pavlogiannis, Mahesh Viswanathan. "Sound Dynamic Deadlock Prediction in Linear Time." *Proceedings of the ACM on Programming Languages (PLDI)*, 2023. [arXiv]

40. **[POPL'23]** Mosaad Al Thokair, Minjian Zhang, Umang Mathur, Mahesh Viswanathan. "Dynamic Race Detection with O(1) Samples." *Proceedings of the ACM on Programming Languages (POPL)*, 2023. [pdf]
ACM SIGPLAN Distinguished Paper Award
ACM SIGPLAN Research Highlights

39. **[ASPLOS'22]** Umang Mathur, Andreas Pavlogiannis, Hünkar Can Tunç, Mahesh Viswanathan. "A Tree Clock Data Structure for Causal Orderings in Concurrent Executions." *Proceedings of the* 27^{th} *International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, 2022.
Best Paper Award [pdf]

38. **[TAC'22]** Chuchu Fan, Zengyi Qin, Umang Mathur, Qiang Ning, Sayan Mitra, Mahesh Viswanathan. "Controller Synthesis for Linear System With Reach-Avoid Specifications." *IEEE Transactions on Automatic Control (TAC)*, 2022. [pdf]

37. **[CONCUR'21]** Rucha Kulkarni, Umang Mathur, Andreas Pavlogiannis. "Dynamic Data-Race Detection through the Fine-Grained Lens." *Proceedings of the* 32^{nd} *International Conference on Concurrency Theory (CONCUR)*, 2021. [pdf]

36. **[ESEC/FSE'21]** Minjian Zhang, Umang Mathur, Mahesh Viswanathan. "Checking LTL[F,G,X] on Compressed Traces in Polynomial Time." *Proceedings of the* 29^{th} *ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE)*, 2021. [pdf]

35. **[ICSE'21 (SEIP)]** Vijayaraghavan Murali, Edward Yao, Umang Mathur, Satish Chandra. "Scalable Statistical Root Cause Analysis on App Telemetry." *Proceedings of the* 43^{rd} *International Conference on Software Engineering, Software Engineering in Practice (ICSE, SEIP)*, 2021. [arXiv]

34. **[POPL'21]** Umang Mathur, Andreas Pavlogiannis, Mahesh Viswanathan. "Optimal Prediction of Synchronization-Preserving Races." *Proceedings of the ACM on Programming Languages (POPL)*, 2021. [pdf]

33. **[FMSD'20]** Umang Mathur, Matthew S. Bauer, Rohit Chadha, A. Prasad Sistla, Mahesh Viswanathan. "Exact Quantitative Probabilistic Model Checking Through Rational Search." *Formal Methods in System Design (FMSD)*, 2020. [pdf]

32. **[LICS'20]** Umang Mathur, Andreas Pavlogiannis, Mahesh Viswanathan. "The Complexity of Dynamic Data Race Prediction." *Proceedings of the* 35^{th} *Annual ACM/IEEE Symposium on Logic in Computer Science (LICS)*, 2020. [pdf]

31. **[CAV'20]** Paul Krogmeier, Umang Mathur, Adithya Murali, P. Madhusudan, Mahesh Viswanathan. "Decidable Synthesis of Programs with Uninterpreted Functions." *Proceedings of the* 32^{nd} *International Conference on Computer Aided Verification (CAV)*, 2020. [pdf]

30. **[TACAS'20]** Umang Mathur, P. Madhusudan, Mahesh Viswanathan. "What's Decidable About Program Verification Modulo Axioms?" *Proceedings of the* 26^{th} *International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*, 2020. [pdf]

29. **[ASPLOS'20]** Umang Mathur, Mahesh Viswanathan. "Atomicity Checking in Linear Time using Vector Clocks." *Proceedings of the* 25^{th} *International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, 2020. [pdf]

28. **[POPL'20]** Umang Mathur, Adithya Murali, Paul Krogmeier, P. Madhusudan, Mahesh Viswanathan. "Deciding Memory Safety for Single-Pass Heap-Manipulating Programs." *Proceedings of the ACM on Programming Languages (POPL)*, 2020. [pdf]

27. **[POPL'19]** Umang Mathur, P. Madhusudan, Mahesh Viswanathan. "Decidable Verification of Uninterpreted Programs." *Proceedings of the ACM on Programming Languages 3 (POPL)*, 2019. [pdf]

26. **[ESEC/FSE'18]** Dileep Kini, Umang Mathur, Mahesh Viswanathan. "Data Race Detection on Compressed Traces." *Proceedings of the* 26^{th} *ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE)*, 2018.
ACM SIGSOFT Distinguished Paper Award [pdf]

25. **[OOPSLA'18]** Umang Mathur, Dileep Kini, Mahesh Viswanathan. "What Happens-After the First Race? Enhancing the Predictive Power of Happens-Before Based Dynamic Race Detection." *Proceedings of the ACM on Programming Languages 2 (OOPSLA)*, 2018. [pdf]

24. **[CSL'18]** P. Madhusudan, Umang Mathur, Shambwaditya Saha, Mahesh Viswanathan. "A Decidable Fragment of Second Order Logic With Applications to Synthesis." *Proceedings of the* 27^{th} *EACSL Annual Conference on Computer Science Logic (CSL)*, 2018. [pdf]

23. **[CAV'18]** Chuchu Fan, Umang Mathur, Sayan Mitra, Mahesh Viswanathan. "Controller Synthesis Made Real: Reach-Avoid Specifications and Linear Dynamics." *Proceedings of the* 30^{th} *International Conference on Computer Aided Verification (CAV)*, 2018. [pdf]

22. **[FMCAD'17]** Matthew S. Bauer, Umang Mathur, Rohit Chadha, A. Prasad Sistla, Mahesh Viswanathan. "Exact Quantitative Probabilistic Model Checking Through Rational Search." *Proceedings of the* 17^{th} *Conference on Formal Methods in Computer-Aided Design (FMCAD)*, 2017. **Invited to appear in FMSD** [pdf]

21. **[CAV'17]** Adrià Gascón, Ashish Tiwari, Brent Carmer, Umang Mathur. "Look for the Proof to Find the Program: Decorated-Component-Based Program Synthesis." *Proceedings of the* 29^{th} *International Conference on Computer Aided Verification (CAV)*, 2017. [pdf]

20. **[PLDI'17]** Dileep Kini, Umang Mathur, Mahesh Viswanathan. "Dynamic Race Prediction in Linear Time." *Proceedings of the* 38^{th} *ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI)*, 2017. [pdf]

19. **[FSTTCS'14]** Rohit Chadha, Umang Mathur, Stefan Schwoon. "Computing Information Flow Using Symbolic Model-Checking." *Proceedings of the* 34^{th} *International Conference on Foundation of Software Technology and Theoretical Computer Science (FSTTCS)*, 2014. [pdf]

18. **[FORMATS'14]** S. Krishna, Umang Mathur, Ashutosh Trivedi. "Weak Singular Hybrid Automata." *Proceedings of the* 12^{th} *International Conference on Formal Modeling and Analysis of Timed Systems (FORMATS)*, 2014. [pdf]

MANUSCRIPTS IN PREPARATION

17. Azadeh Farzan, Umang Mathur. "Parametrizing Reads-From Equivalence for Predictive Monitoring." 2025.

16. Zheng Shi, Yifan Dong, Zongyuan Liu, Umang Mathur, Andreas Pavlogiannis. "Rethinking Synchronization in the Go Memory Model." 2025.

15. Zhendong Ang, Azadeh Farzan, Umang Mathur. "Enhanced Data Race Prediction Through Modular Reasoning." 2025. [arXiv]

14. Ruishi Li, Bo Wang, Tianyu Li, Prateek Saxena, Umang Mathur. "Refactoring C Code Helps Its Translation to Rust." 2025.

13. Tianyu Li, Ruishi Li, Bo Wang, Brandon Paulsen, Umang Mathur, Prateek Saxena. "Adversarial Agent Collaboration for C to Rust Translation." 2025. [arXiv]

12. Dylan Wolff, Huan Zhao, Mehtab Zafar, Umang Mathur, Abhik Roychoudhury. "Directed Concurrency Fuzzing." 2026.

11. Bo Wang, Brandon Paulsen, Joey Dodds, Daniel Kroening, Umang Mathur, Prateek Saxena. "Mostly Automatic Translation of Language Interpreters from C to Safe Rust." 2026.
10. Sasha Pak, Richard Willie, Umang Mathur, Fabian Muehlboeck, Alex Potanin. "Partial Borrows in Rust." 2026.
9. Karuna Grewal, Brighten Godfrey, Justin Hsu, Umang Mathur. "SafePar: Monitoring Asynchrony in Microservices." 2026.
8. Tianyu Li, Ruishi Li, Bo Wang, Umang Mathur, Prateek Saxena. "Safe But Not Secure: Beware of Vulnerable Translations of Unsafe C to Safe Rust." 2026.
7. Huan Zhao, Kushagra Gupta, Priyanka Golia, Umang Mathur, Subodh Sharma. "Benchmarking Concurrency Bug Detectors via Amplification." 2026.
6. Hua Jun Teow, Umang Mathur, Kuldeep S. Meel. "Approximate Model Counting for String Constraints." 2026.
5. Yifan Dong, Zongyuan Liu, Zheng Shi, Richard Willie, Umang Mathur, Andreas Pavlogiannis. "A Mechanized Framework for Proving Soundness of Trace-based Dynamic Analyses." 2026.
4. Jeffrey Lee, Guk Yi Siong, Richard Willie, Umang Mathur. "Mechanized Foundations of Mazurkiewicz Trace Theory." 2026.
3. Jed Koh, Umang Mathur. "Testing Regular Languages Modulo Partial Commutation." 2026.
2. Ziyue Jin, Umang Mathur. "Higher-Order Generation of First-Order Theories." 2026.
1. Shinhae Kim, David Zhu, Alan Han, Kevin Guan, Saikat Dutta, Umang Mathur, Owolabi Legunsen. "Is Dynamic Data-Race Prediction Ready for Testing in Open-Source Software?" 2026.

TEACHING

Foundations of Logic in Computer Science (CS4269/5469), NUS

Semester II 2021/22, Semester II 2022/23, Semester II 2023/24, Semester I 2024/25, Semester II 2025/26

Data Structures and Algorithms (CS2040C), NUS

Semester I 2023/24

Formal Methods for Software Engineering (CS4211), NUS

Semester I 2025/26, Semester I 2026/27

Topics in Prog. Languages & Software Engineering (CS6217), NUS

Semester I 2022/23, Semester I 2024/25

STUDENT, POSTDOCTORAL, AND RESEARCH ASSISTANT SUPERVISION

Alexey Paznikov, Research Fellow (NUS)	July 2024 – present
Michael Schwarz, Research Fellow (NUS)	September 2025 – present
Zhendong Ang, PhD (NUS)	August 2022 – present
Zheng Shi, PhD (NUS)	January 2023 – present
Huan Zhao, PhD (NUS), co-advised with Prof. Abhik Roychoudhury	August 2023 – present
Tianyu Li, PhD (NUS), co-advised with Prof. Prateek Saxena	August 2023 – present
Grace Tan, PhD (NUS)	August 2024 – October 2025
Aditya Ranjan Jha, PhD (NUS), co-advised with Prof. Prateek Saxena	August 2024 – present
Zihan Zhou, Master's (NUS)	August 2024 – present
Hien Huynh, MComp (NUS)	January 2026 – present
Zengyan Hao, MComp (NUS)	January 2025 – December 2025
Zheng Shi, MComp (NUS)	May 2022 – December 2022
Richard Willie, Research Assistant (NUS)	2025 – present
Ankit Jayant, Research Assistant (NUS)	September 2026 – present

Daniel Lim, Research Assistant (NUS)	2024 – 2025
San Shao Qian, BComp (NUS)	August 2026 – present
Wong Yee Hern, BComp (NUS), UROP	August 2026 – present
Lee Wai Kin, BComp (NUS)	August 2026 – present
Koh Jun Hong Nicolas, BComp (NUS)	August 2026 – present
Xu Luoqi, BComp (NUS)	August 2026 – present
Cheah Gee Nung, Ian, BComp (NUS)	August 2026 – present
Zwe Zeya, BComp (NUS)	August 2026 – present
Chittidi Raghavanaidu, BComp (NUS)	August 2026 – present
Lim Jia Sheng, BComp (NUS)	August 2026 – present
Zhang Qixiang, BComp (NUS)	August 2026 – present
Gabrielle Gianna Tan-Winings, BComp (NUS)	August 2026 – present
Ho Wei Haw, BComp (NUS)	August 2022 – May 2023
Illio Suardi, BComp (NUS)	January 2023 – December 2024
Jed Koh Jin Keat, BComp (NUS)	January 2023 – May 2025
Richard Willie, BComp (NUS)	August 2023 – May 2024
Dasco Gabriel, BComp (NUS)	August 2023 – May 2024
Hongyi Huang, BComp (NUS)	August 2023 – 2025
David Zhu, BComp (NUS)	August 2023 – May 2025
Zheng Han Lee, BComp (NUS)	August 2023 – May 2024
Bryan Lim, BComp (NUS)	August 2024 – May 2025
Arsyad Kamili, BComp (NUS)	August 2024 – May 2025
Ramanathan Kumarappan, BComp (NUS)	August 2024 – May 2025
Wern Lim, BComp (NUS)	August 2025 – May 2026
Hua Jun Teow, BComp (NUS)	August 2025 – May 2026
Jeffrey Lee, BComp (NUS)	August 2025 – May 2026
Guk Yi Siong, BComp (NUS)	August 2025 – May 2026
Hong Jung Woo, BComp (NUS)	August 2025 – May 2026
Dick Ong, BComp (NUS)	August 2025 – May 2026
Ivan Tan, BComp (NUS)	August 2025 – May 2026

RESEARCH INTERN SUPERVISION

Aniket Mishra, IIT Gandhinagar	2026
Ziyue Jin, Peking University	2025
Omar Islam Laskar, IIT Delhi	2025
Thomas Cheeramvelil, IIT Bombay	2024
Anish Kulkarni, IIT Bombay	2024
Pratik Sahoo, IIT Bombay	2024
Arhaan Ahmad, IIT Bombay	2023
Arnav Singh, IIT Bombay	2023
Aryan Soltani, University of Tehran	2023
Abhinav Barnawal, IIT Delhi	2022

STUDENT AWARDS

Hua Jun Teow: Outstanding Computing Project Prize (OCP), NUS AY 2025/26
Jed Koh Jin Keat: Outstanding Undergraduate Researcher Prize (OURP), individual, NUS AY 2024/25
Arsyad Kamili: Third Place, Undergraduate Category, ACM Student Research Competition, SPLASH 2025
Grace Tan: Gold Medal, Graduate Category, ACM Student Research Competition, POPL 2025
Jed Koh Jin Keat: Gold Medal, Undergraduate Category, ACM Student Research Competition, POPL 2025
Zheng Han Lee: Outstanding Undergraduate Researcher Prize (OURP), individual, NUS AY 2023/24
Zheng Han Lee: Gold Medal, Undergraduate Category, ACM Student Research Competition, PLDI 2024

SERVICE

Co-organizer, Singapore Programming Languages Summit, 2025
Steering Committee Member, Singapore Programming Languages Summit
Programming Languages Mentoring Workshop, Senior Chair, PLDI 2025
Organizing Committee Member, Verification Mentoring Workshop, CAV 2024
Programming Languages Mentoring Workshop, Junior Chair, PLDI 2024
NSF Review Panel, 2023
Program Committee Member, FSE 2027
Program Committee Member, SETTA 2026
Program Committee Member, ICCQ 2026
Program Committee Member, POPL 2026 (SRC)
Program Committee Member, SPLASH/ISSTA 2026 Doctoral Symposium
Program Committee Member, PLDI 2025
Review Committee Member, OOPSLA 2025
Review Committee Member, ESOP 2025
Review Committee Member, TACAS 2025
Review Committee Member, ATVA 2025
Review Committee Member, RV 2025
Review Committee Member, APLAS 2025
Review Committee Member, SETTA 2025
Program Committee Member, VSTTE 2024
Program Committee Member, CONCUR 2024
Program Committee Member, CAV 2024
Program Committee Member, ICSE 2024
Program Committee Member, PLDI (SRC) 2023
Program Committee Member, POPL 2023
Program Committee Member, APLAS 2022
Artifact Evaluation Committee Member, OOPSLA 2020
Artifact Evaluation Committee Member, PLDI 2020
Artifact Evaluation Committee Member, CAV 2020
Brief Announcements Program Committee Member, PPoPP 2020
Artifact Evaluation Committee Member, POPL 2020
Repeatability Evaluation Committee Member, HSCC 2017
Reviewer for peer-reviewed conferences and journals: STACS 2024, ICALP 2023, FoSSaCS 2023, TSE 2022, CONCUR 2021, SOSP 2019, PLDI 2019, POPL (2018 & 2019), CAV (2016 – 2018), FM 2018, ICALP 2017, HSCC 2017, FORTE (2016 & 2018), FSTTCS (2014 & 2017), and FORMATS 2016.

Head, Department Academic Mentorship Program, CSE, IIT Bombay (2013–2014)

Mentor, Department Academic Mentorship Program, CSE, IIT Bombay (2012–2013)

RECENT INVITED TALKS AND TUTORIALS

Automata Theory: The Gift That Keeps Giving. PLMW @ PLDI 2026.

Dynamic Data Race Prediction: Fundamentals, Theory and Practice. Tutorial co-located with POPL 2021, ASPLOS 2021, FSE 2022, SOSP 2023, and PPoPP 2026.

Randomization for Concurrency Testing. CMU.

Equivalences for Causal Concurrency. Aarhus University, UIUC, Commute Workshop (2022), Uppsala University, Georgia Tech, RHPL Workshop (FSTTCS 2025), University of Wisconsin–Madison (20 April 2026), Purdue University (23 April 2026), University of Chicago (May 2026).

Efficient Data Structures for Dynamic Analysis of Concurrent Programs. NUS SoC Colloquium.

Dynamic Data Race Prediction: Fundamentals and Advances. Uppsala University, George Mason University, IARCS Verification Seminar Series, IISc Bangalore, IST Austria, IIT Delhi, ETH Zurich, NUS, HKUST, Microsoft Research India, MPI-SWS, Huawei Hong Kong Formal Methods Workshop 2023.

Decidable Verification of Uninterpreted and Partially Interpreted Programs. Aarhus University, Simons Institute for the Theory of Computing, Online Worldwide Logic Seminar.

Faster Algorithms and Data-Structures for Detecting Concurrency Bugs. Huawei Sentosa Summit 2023.

Exposing Concurrency Bugs from their Hiding Places. Huawei Strategy and Technology Workshop 2023, CMI (India), MPI-SWS (Kaiserslautern).

Rethinking Timestamping in Distributed Computing Through a Data-Structure Lens. Online Special Seminar for HKUST CSE Postgraduate Students, Simons Institute (Berkeley) 2024, VDS Workshop 2025, Global Software Technology Summit 2023 (Huawei Labs).

Sampling for Dynamic Race Detection. Workshop on Research Highlights in Programming Languages (FSTTCS 2023).

Dynamic Race Detection with O(1) Samples. LaBRI (2023).

Formal Methods and Logic for Reasoning about Software. International Research Workshop in Computer Science and Information Systems, Prince of Songkla University, Phuket, Thailand, 2022.