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Education

PhD, National University of Singapore, Singapore, 2008

Bachelor of Engineering, Nanyang Technological University, Singapore, 2004

Academic Appointments

OUB Chair Professor of Computer Science, School of Computing and Information Systems, SMU, Jul 2023 - Present

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

Professor of Information Systems, School of Computing and Information Systems, SMU, Jan 2021 - Mar 2021

Associate Professor of Information Systems, School of Computing and Information Systems, SMU, Jul 2016 - Dec 2020

Assistant Professor of Information Systems, School of Computing and Information Systems, SMU, Jan 2009 - Jun 2016

Lecturer of Information Systems, School of Computing and Information Systems, SMU, May 2008 - Dec 2008

Academic Administrative Positions

Director, Centre for Research for Intelligent Software Engineering (RISE), Centre for Research on Intelligent Software Engineering, SMU, Apr 2023 - Present

Director, Information Systems & Technology Cluster, School of Computing and Information Systems, SMU, Jul 2021 - Present

Deputy Director, Research Lab for Intelligent Software Engineering, Centre for Research on Intelligent Software Engineering, SMU, Apr 2021 - Mar 2023

Director, Research Lab for Intelligent Software Engineering, Centre for Research on Intelligent Software Engineering, SMU, Apr 2020 - Mar 2021

Member (School of Information Systems), Institutional Review Board, SMU Institutional Review Board, SMU, Nov 2018 - Dec 2020

Other Positions and Affiliations

Visiting Researcher, Microsoft Research, Microsoft, United States of America, Jul 2014 - Sep 2014

Awards and Honors

ACM SIGSOFT Distinguished Paper Awards (x2), 46th IEEE/ACM International Conference on Software Engineering (ICSE 2024), 2024

IEEE TCSE Distinguished Paper Award, 31st IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER 2024), 2024

ACM Distinguished Speaker (2024-2027), Association of Computing Machinery (ACM), 2024

NUS SoC Distinguished Computing Alumni Award , School of Computing, National University of Singapore, 2024

Best Student Paper Award, 40th IEEE International Conference on Software Maintenance and Evolution (ICSME 2024), 2024

ACM SIGSOFT Distinguished Paper Award, 33rd ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA 2024), 2024

Fellow of Association of Computing Machinery (ACM Fellow), Association of Computing Machinery (ACM), 2024

Most Influential Paper Nominations , 34th IEEE International Symposium on Software Reliability Engineering (ISSRE 2023) , 2023

Most Influential Paper Nominations (x3), 30th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER 2023), 2023

Hot and Highly Cited Paper recognition given to an IEEE Transactions on Software Engineering (TSE 2021) paper titled "Smart Contract Development: Challenges and Opportunities", Web of Science, 2023

NRF Investigatorship, National Research Foundation, 2023

Most Influential Paper Nomination (x2), 39th IEEE International Conference on Software Maintenance and Evolution (ICSME 2023), 2023

Test-of-Time Award, 33rd IEEE International Symposium on Software Reliability Engineering (ISSRE 2022), 2022

Distinguished Paper Award Honorable Mention, 38th Annual Computer Security Applications Conference (ACSAC 2022), 2022

Nominated for ACM SIGSOFT Distinguished Paper, 37th ACM/IEEE International Conference on Automated Software Engineering (ASE 2022), 2022

Most Influential Paper Award, 29th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER 2022), 2022

Shortlisted for Most Influential Paper Award (x2), 29th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER 2022), 2022

Nominated for ACM SIGSOFT Distinguished Paper (x2), 44th ACM/IEEE International Conference on Software Engineering (ICSE 2022), 2022

Excellent Teacher Award, Singapore Management University, 2022

Best Paper Runner Up, IEEE Transactions of Software Engineering (2021), IEEE Computer Society, 2022

Fellow of Institute of Electrical and Electronics Engineers (IEEE Fellow), Institute of Electrical and Electronics Engineers (IEEE), 2022

IEEE TCSE Distinguished Service Award, Institute of Electrical and Electronics Engineers (IEEE), 2021

IEEE TCSE Distinguished Paper Award (Best Paper), 39th IEEE International Conference on Software Maintenance and Evolution (ICSME 2023), 2021

Fellow of Automated Software Engineering (ASE Fellow), Automated Software Engineering (ASE), 2021

ACM SIGSOFT Distinguished Paper Award, 17th ACM/IEEE International Conference on Mining Software Repositories (MSR 2020), 2020

Shortlisted for Most Influential Paper Award, 27th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER), 2020

Nominated for Excellent Teacher Award (1 out of 7 nominees), Singapore Management University, 2019

ACM SIGSOFT Distinguished Paper Award, 34th ACM/IEEE International Conference on Automated Software Engineering (ASE 2019), 2019

Best Tool Demo Paper Award, 27th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE), 2019

ACM Distinguished Member for Scientific Contribution to Computing, Association for Computing Machinery (ACM), 2019

Lee Kuan Yew Fellowship, Singapore Management University, 2019

ACM SIGSOFT Distinguished Paper Award, 33rd ACM/IEEE International Conference on Automated Software Engineering (ASE 2018), 2018

Distinguished Program Committee Member, Twenty-Seventh International Joint Conference on Artificial Intelligence (IJCAI 2018), 2018

ACM SIGSOFT Distinguished Paper Award, 26th ACM/IEEE Conference on Program Comprehension (ICPC 2018), 2018

Lee Kong Chian Fellowship, Singapore Management University, 2018

Highly Commended Paper Award, 12th ACM/IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM 2018), 2018

Best Early Research Achievement (ERA) Paper, 24th IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER 2017), 2017

Outstanding Reviewer Award, Information and Software Technology journal, 2017

Nominated for Distinguished Paper Awards (2 Papers), 33rd IEEE International Conference on Software Maintenance and Evolution (ICSME 2017), 2017

Nominated for Best Paper Award, 13th ACM/IEEE International Conference on Mining Software Repositories (MSR), ACM/IEEE International Conference, 2016

Nominated for Best Paper Award, 32nd IEEE International Conference on Software Maintenance and Evolution (ICSME), IEEE International, 2016

Outstanding Reviewer Award, Information and Software Technology journal, 2016

Distinguished Program Committee Member, 32nd IEEE/ACM International Conference on Automated Software Engineering (ASE 2017), 2016

Shortlisted for Most Influential Paper Award, 23rd IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER), 2016

Most Active Reviewer Award, Empirical Software Engineering journal, 2015

ACM SIGSOFT Distinguished Paper Award, 10th Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Foundations on Software Engineering (ESEC-FSE), 2015

Distinguished Reviewer Award, 22nd IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER), 2015

Nominated for Best Paper Award, 23rd IEEE International Conference on Program Comprehension (ICPC), 2015

Best Student Paper Award, 19th International Conference on Engineering of Complex Computer Systems (ICECCS), 2014

Most Promising Idea Award, 22nd International Conference on Program Comprehension (ICPC), 2014

Nominated for Best Paper Awards (2 Papers), 29th IEEE International Conference on Software Maintenance (ICSM), 2013

Distinguished Reviewer Award, 20th Working Conference on Reverse Engineering (WCRE), 2013

Nominated for SMU Most Promising Teacher Award (1 of 7 nominees), 2012, 2011

ACM SIGSOFT Distinguished Paper Award, 27th IEEE/ACM International Conference on Automated Software Engineering (ASE), 2012

Nominated for Distinguished Paper Award, 18th International Conference on Software Testing and Analysis (ISSTA), 2009

Lee Foundation Fellow for Research Excellence, 2009

2nd Position, ACM SIGPLAN Programming Language Design and Implementation (PLDI) Student Research Competition, 2007

RESEARCH

Research Interests

Software Analytics

Software Engineering

Artificial Intelligence

Cybersecurity

Publications

Journal Articles [Refereed]

PTM4Tag+: Tag recommendation of stack overflow posts with pre-trained models, by HE, Junda; XU, Bowen; YANG, Zhou; HAN, DongGyun; YANG, Chengran; LIU, Jiakun; ZHAO, Zhipeng; LO, David. (2025). *Empirical Software Engineering*, 30 (1), 1-45. <https://doi.org/10.1007/s10664-024-10576-z> (Published)

Gotcha ! This model uses my code ! Evaluating membership leakage risks in code models, by YANG, Zhou; ZHAO, Zhipeng; WANG, Chenyu; SHI, Jieke; KIM, Dongsum; HAN, Donggyun; LO, David. (2024). *IEEE Transactions on Software Engineering*, 50 (12), 3290-3306. <https://doi.org/10.1109/TSE.2024.3482719> (Published)

Towards more precise coincidental correctness detection with Deep Semantic Learning, by XIE, Huan; LEI, Yan; YAN, Meng; LI, Shanshan; MAO, Xiaoguang; YU, Yue; LO, David. (2024). *IEEE Transactions on Software Engineering*, 50 (12), 3265-3289. <https://doi.org/10.1109/TSE.2024.3481893> (Published)

Just-In-Time TODO-missed commits detection, by WANG, Haoye; GAO, Zhipeng; HU, Xing; LO, David; GRUNDY, John; WANG, Xinyu. (2024). *IEEE Transactions on Software Engineering*, 50 (11), 2732-2752. <https://doi.org/10.1109/TSE.2024.3405005> (Published)

Leveraging Large Language Model for automatic patch correctness assessment, by ZHOU, Xin; XU, Bowen; KIM, Kisub; HAN, DongGyun; NGUYEN, Hung Huu; LE-CONG, Thanh; HE, Junda; LE, Bach; LO, David. (2024). *IEEE Transactions on Software Engineering*, 50 (11), 2865-2883. <https://doi.org/10.1109/TSE.2024.3452252> (Published)

Angels or demons: Investigating and detecting decentralized financial traps on ethereum smart contracts,

- by CHEN, Jiachi; HU, Jiang; XIA, Xin; LO, David; GRUNDY, John; GAO, Zhipeng; CHEN, Ting. (2024). *Automated Software Engineering*, 31 (2), 1-33. <https://doi.org/10.1007/s10515-024-00459-4> (Published)
- Meta-learning for multi-family Android malware classification, by LI, Yao; YUAN, Dawei; ZHANG, Tao; CAI, Haipeng; LO, David; GAO, Cuiyun; LUO, Xiapu; JIANG, He. (2024). *ACM Transactions on Software Engineering and Methodology*, 33 (7), 1-27. <https://doi.org/10.1145/3664806> (Published)
- Evaluating SZZ implementations : An empirical study on the Linux Kernel, by LYU, Yunbo; KANG, Hong Jin; WIDYASARI, Ratnadira; LAWALL, Julia; LO, David. (2024). *IEEE Transactions on Software Engineering*, 50 (9), 2219-2239. <https://doi.org/10.1109/TSE.2024.3406718> (Published)
- Refining ChatGPT-generated code: Characterizing and mitigating code quality issues, by LIU, Yue; LE-CONG, Thanh; WIDYASARI, Ratnadira, TANTITHAMTHAVORN, Chakkrit, LI, Li, LE, Xuan-Bach Dinh; LO, David. (2024). *ACM Transactions on Software Engineering and Methodology*, 33 (5), 1-26. <https://doi.org/10.1145/3643674> (Published)
- DAppSCAN: Building large-scale datasets for smart contract weaknesses in DApp Projects, by ZHENG, Zibin; SU, Jianzhong; CHEN, Jiachi; LO, David; ZHONG, Zhijie; YE, Mingxi. (2024). *IEEE Transactions on Software Engineering*, 50 (6), 1360-1373. <https://doi.org/10.1109/TSE.2024.3383422> (Published)
- Analyzing and revivifying function signature inference using deep learning, by LIN, Yan; SINGHAL, Trisha; GAO, Debin; LO, David. (2024). *Empirical Software Engineering*, 29 (69), 1-48. <https://doi.org/10.1007/s10664-024-10453-9> (Published)
- Analyzing and revivifying function signature inference using deep learning, by LIN, Yan; SINGHAL, Trisha; GAO, Debin; LO, David. (2024). *Empirical Software Engineering*, 29 (3), 1-45. <https://doi.org/10.1007/s10664-024-10453-9> (Published)
- Range specification bug detection in flight control systems through fuzzing, by HAN, Ruidong; MA, Siqi; LI, Juanru; NEPAL, Surya; LO, David; MA, Zhuo; MA, Jianfeng . (2024). *IEEE Transactions on Software Engineering*, 50 (3), 461-473. <https://doi.org/10.1109/TSE.2024.3354739> (Published)
- Representation learning for Stack Overflow posts: How far are we?, by HE, Junda; ZHOU, Xin; XU, Bowen; ZHANG, Ting; KIM, Kisub; YANG, Zhou; THUNG, Ferdian; IRSAN, Ivana Clairene; LO, David. (2024). *ACM Transactions on Software Engineering and Methodology*, 33 (3), 1-24. <https://doi.org/10.1145/3635711> (Published)
- Stealthy backdoor attack for code models, by YANG, Zhou; XU, Bowen; ZHANG, Jie M.; KANG, Hong Jin; SHI, Jieke; HE, Junda; LO, David. (2024). *IEEE Transactions on Software Engineering*, 50 (4), 1-21. <https://doi.org/10.1109/TSE.2024.3361661> (Advance Online)
- Federated learning for software engineering: A case study of code clone detection and defect prediction, by YANG, Yanming; HU, Xing; GAO, Zhipeng; CHEN, Jinfu; NI, Chao; XIA, Xin; LO, David. (2024). *IEEE Transactions on Software Engineering*, 50 (2), 1-26. <https://doi.org/10.1109/TSE.2023.3347898> (Advance Online)
- Understanding newcomers' onboarding process in deep learning projects, by HAN, Junxiao; ZHANG, Jiahao; LO, David; XIA, Xin; DENG, Shuigang; WU, Minghui. (2024). *IEEE Transactions on Software Engineering*, 50 (3), 1-18. <https://doi.org/10.1109/TSE.2024.3353297> (Published)
- A closer look at the security risks in the Rust ecosystem, by ZHENG, Xiaoye; WAN, Zhiyuan; ZHANG, Yun; CHANG, Rui; LO, David. (2023). *ACM Transactions on Software Engineering and Methodology*, 33 (2), 1-34. <https://doi.org/10.1145/3624738> (Published)
- Robust test selection for deep neural networks, by SUN, Weifeng; YAN, Meng; LIU, Zhongxin; LO, David. (2023). *IEEE Transactions on Software Engineering*, 49 (12), 5250-5278. <https://doi.org/10.1109/TSE.2023.3330982> (Published)
- On the sustainability of deep learning projects: Maintainers' perspective, by HAN, Junxiao; LIU, Jiakun; LO, David; ZHI, Chen; CHEN, Yishan; DENG, Shuiguang. (2023). *Journal of Software: Evolution and Process*, 36 (7), 1-20. <https://doi.org/10.1002/smr.2645> (Advance Online)
- Experimental comparison of features, analyses, and classifiers for Android malware detection, by SHAR, Lwin Khin; DEMISSIE, Biniam Fisseha; CECCATO, Mariano; YAN, Naing Tun; LO, David; JIANG, Lingxiao; BIENERT, Christoph. (2023). *Empirical Software Engineering*, 28 (6), 1-39. <https://doi.org/10.1007/s10664-023-10375-y> (Published)

- DexBERT: Effective, task-agnostic and fine-grained representation learning of Android bytecode, by SUN, Tiezhu; ALLIX, Kevin; KIM, Kisub; ZHOU, Xin; KIM, Dongsun; LO, David; BISSYANDE, Tegawendé F.; KLEIN, Jacques. (2023). *IEEE Transactions on Software Engineering*, 49 (10), 4691-4706. <https://doi.org/10.1109/TSE.2023.3310874> (Published)
- Revisiting the Identification of the Co-evolution of Production and Test Code, by SUN, Weifeng; YAN, Meng; LIU, Zhongxin; XIA, Xin; LEI, Yan; LO, David. (2023). *ACM Transactions on Software Engineering and Methodology*, 32 (6), 1-37. <https://doi.org/10.1145/3607183> (Published)
- Multi-Granularity Detector for Vulnerability Fixes, by NGUYEN, Truong Giang; CONG; Thanh Le; KANG, Hong Jin; WIDYASARI, Ratnadira; YANG, Chengran; ZHAO, Zhipeng; XU, Bowen; ZHOU, Jiayuan; XIA, Xin; HASSAN, Ahmed E.; LE, Xuan-Bach Dinh; LO, David. (2023). *IEEE Transactions on Software Engineering*, 49 (8), 4035-4057. <https://doi.org/10.1109/TSE.2023.3281275> (Published)
- Context-Aware Neural Fault Localization, by ZHANG, Zhuo, YAN, Lei; MAO, Xiaoguang; YAN, Meng; XIA, Xin; LO, David. (2023). *IEEE Transactions on Software Engineering*, 49 (7), 3939-3954. <https://doi.org/10.1109/TSE.2023.3279125> (Published)
- Duplicate bug report detection: How far are we?, by ZHANG, Ting; HAN, DongGyun; VINAYAKARAO, Venkatesh; IRSAN, Ivana Clairine; XU, Bowen; THUNG, Ferdian; LO, David; JIANG, Lingxiao. (2023). *ACM Transactions on Software Engineering and Methodology*, 32 (4), 1-32. <https://doi.org/10.1145/3576042> (Published)
- Web APIs: Features, issues, and expectations: A large-scale empirical study of Web APIs from two publicly accessible registries using Stack Overflow and a user survey, by ZHANG, Neng; ZOU, Ying; XIA, Xin; HUANG, Qiao; LO, David; LI, Shanping. (2023). *IEEE Transactions on Software Engineering*, 49 (2), 498-528. <https://doi.org/10.1109/TSE.2022.3154769> (Published)
- Invalidator: Automated Patch Correctness Assessment Via Semantic and Syntactic Reasoning, by LE-CONG, Tranh; LUONG, Duc Minh; LE, Xuan Bach D.; LO, David; TRAN, Nhat-Hoa; QUANG-HUY, Bui; HUYNH, Quyet-Thang. (2023). *IEEE Transactions on Software Engineering*, 49 (6), <https://doi.org/10.1109/TSE.2023.3255177> (Advance Online)
- How to Find Actionable Static Analysis Warnings: A Case Study With FindBugs, by YEDIDA, Rahul; KANG, Hong Jin; TU, Huy; YANG, Xueqi; LO, David; MENZIES, Tim. (2023). *IEEE Transactions on Software Engineering*, 49 (4), 1-17. <https://doi.org/10.1109/TSE.2023.3234206> (Advance Online)
- I know what you are searching for: Code snippet recommendation from Stack Overflow posts, by GAO, Zhipeng; XIA, Xin; LO, David; GRUNDY, John C.; ZHANG, Xindong; XING, Zhenchang. (2023). *ACM Transactions on Software Engineering and Methodology*, 32 (3), 1-42. <https://doi.org/10.1145/3550150> (Published)
- Just-In-Time Obsolete Comment Detection and Update, by LIU, Zhongxin; XIA, Xin; LO, David; YAN, Meng; LI, Shangping. (2023). *IEEE Transactions on Software Engineering*, 49 (1), 1-23. <https://doi.org/10.1109/TSE.2021.3138909> (Published)
- BiasFinder: Metamorphic Test Generation to Uncover Bias for Sentiment Analysis Systems, by ASYROFI, Muhammad Hilmi; YANG, Zhou; YUSUF, Imam Nur Bani; KANG, Hong Jin; THUNG, Ferdian; LO, David. (2022). *IEEE Transactions on Software Engineering*, 48 (12), 5087-5101. <https://doi.org/10.1109/TSE.2021.3136169> (Published)
- Opportunities and Challenges in Code Search Tools, by LIU, Chao; XIA, Xin; LO, David; GAO, Cuiying; YANG, Xiaohu; GRUNDY, John. (2022). *ACM Computing Surveys*, 54 (9), 1-35. <https://doi.org/10.1145/3480027> (Published)
- Deep Just-In-Time Defect Localization, by QIU, Fangcheng; GAO, Zhipeng; XIA, Xin; LO, David; GRUNDY, John; WANG, Xinyu. (2022). *IEEE Transactions on Software Engineering*, 48 (12), 5068-5086. <https://doi.org/10.1109/TSE.2021.3135875> (Published)
- Real world projects, real faults: evaluating spectrum based fault localization techniques on Python projects, by WIDYASARI, Ratnadira; PRANA, Gege Artha Azriadi; HARYONO, Stefanus Agus; WANG, Shaowei; LO, David. (2022). *Empirical Software Engineering*, 27 (6), 1-50. <https://doi.org/10.1007/s10664-022-10189-4> (Published)
- Legion: Massively Composing Rankers for Improved Bug Localization at Adobe, by JARMAN, Darryl; BERRY, Jeffrey; SMITH, Riley; THUNG, Ferdian; LO, David. (2022). *IEEE Transactions on Software Engineering*, 48

(8), 3010-3024. <https://doi.org/10.1109/TSE.2021.3075215> (Published)

Data Quality Matters: A Case Study on Data Label Correctness for Security Bug Report Prediction, by WU, Xiaoxue; ZHENG, Wei; XIA, Xin; LO, David. (2021). *IEEE Transactions on Software Engineering*, 48 (7), 2541-2556. <https://doi.org/10.1109/TSE.2021.3063727> (Published)

On measuring network robustness for weighted networks, by ZHENG, Jianbing; GAO, Ming; LIM, Ee-Peng; LO, David; JIN, Cheqing; ZHOU, Aoying. (2022). *Knowledge and Information Systems*, 64 (7), 1967-1996. <https://doi.org/10.1007/s10115-022-01670-z> (Accepted)

Chatbot4QR: Interactive Query Refinement for Technical Question Retrieval, by ZHANG, Neng; HUANG, Qiao; XIA, Xin; ZOU, Ying; LO, Ding; XING, Zhenchang. (2022). *IEEE Transactions on Software Engineering*, 48 (4), 1185-1211. <https://doi.org/10.1109/TSE.2020.3016006> (Published)

AndroEvolve: automated Android API update with data flow analysis and variable denormalization, by HARYONO, Stefanus A.; THUNG, Ferdian; LO, David; JIANG, Lingxiao; LAWALL, Julia; KANG, Hong Jin; SERRANO, Lucas; MULLER, Gilles. (2022). *Empirical Software Engineering*, 27 (3), 1-35. <https://doi.org/10.1007/s10664-021-10096-0> (Published)

A Deep Dive into the Impact of COVID-19 on Software Development, by NETO, Paulo Anselmo da Mota Silveira; MANNAN, Umme Ayda; ALMEIDA, Eduardo Santana de; NAGAPPAN, Nachiappan; LO, David; KOCHHAR, Pavneet Singh; GAO, Cuiyun; AHMED, Iftekhar. (2022). *IEEE Transactions on Software Engineering*, 48 (9), 3342-3360. <https://doi.org/10.1109/TSE.2021.3088759> (Published)

Including everyone, everywhere: Understanding opportunities and challenges of geographic gender-inclusion in OSS, by PRANA, Gede Artha Azriadi; FORD, Denaë; RASTOGI, Ayushi; LO, David; PURANDARE, Rahul; NAGAPPAN, Nachiappan. (2022). *IEEE Transactions on Software Engineering*, 48 (9), 3394-3409. <https://doi.org/10.1109/TSE.2021.3092813> (Published)

Modeling Functional Similarity in Source Code With Graph-Based Siamese Networks, by MEHROTRA, Nikita; AGARWAL, Navdha; GUPTA, Piyush; ANAND, Saket; LO, David; PURANDARE, Rahul. (2022). *IEEE Transactions on Software Engineering*, 48 (10), 3771-3789. <https://doi.org/10.1109/TSE.2021.3105556> (Published)

Broken External Links on Stack Overflow, by LIU, Jiakun; XIA, Xin; LO, David; ZHANG, Haoxiang; ZOU, Ying; HASSAN, Ahmed E.; LI, Shanping. (2022). *IEEE Transactions on Software Engineering*, 48 (9), 3242-3267. <https://doi.org/10.1109/TSE.2021.3086494> (Published)

Active Learning of Discriminative Subgraph Patterns for API Misuse Detection, by KANG, Hong Jin; LO, David. (2022). *IEEE Transactions on Software Engineering*, 48 (8), 2761-2781. <https://doi.org/10.1109/TSE.2021.3069978> (Published)

Post2Vec: Learning Distributed Representations of Stack Overflow Posts, by XU, Bowen; HOANG, Thong; SHARMA, Abhishek; YANG, Chengran; XIA, Xin; LO, David. (2022). *IEEE Transactions on Software Engineering*, 48 (9), 3423-3441. <https://doi.org/10.1109/TSE.2021.3093761> (Published)

Understanding in-app advertising issues based on large scale app review analysis, by GAO, Cuiyun; ZENG, Jichuan; LO, David; XIA, Xin; KING, Irwin; LYU, Michael R.. (2022). *Information and Software Technology*, 142 1-13. <https://doi.org/10.1016/j.infsof.2021.106741> (Published)

DefectChecker: Automated Smart Contract Defect Detection by Analyzing EVM Bytecode, by CHEN, Jiachi; XIA, Xin; LO, David; GRUNDY, John; LUO, Xiapu; CHEN, Ting. (2021). *IEEE Transactions on Software Engineering*, 48 (7), 2189-2207. <https://doi.org/10.1109/TSE.2021.3054928> (Published)

Emerging App Issue Identification via Online Joint Sentiment-Topic Tracing, by GAO, Cuiyun; ZENG, Jichuan; WEN, Zhiyuan; LO, David; XIA, Xin; KING, Irwin; LYU, Michael R.. (2022). *IEEE Transactions on Software Engineering*, 48 (8), 3025-3043. <https://doi.org/10.1109/TSE.2021.3076179> (Published)

Just-In-Time Defect Identification and Localization: A Two-Phase Framework, by YAN, Meng; XIA, Xin; FAN, Yuanrui; HASSAN, Ahmed E.; LO, David; LI, Shanping. (2022). *IEEE Transactions on Software Engineering*, 48 (1), 82-101. <https://doi.org/10.1109/TSE.2020.2978819> (Published)

On the Reproducibility and Replicability of Deep Learning in Software Engineering, by LIU, Chao; GAO, Cuiyun; XIA, Xin; LO, David; GRUNDY, John C.; YANG, Xiaohu. (2022). *ACM Transactions on Software Engineering and Methodology*, 31 (1), 1-46. <https://doi.org/10.1145/3477535> (Published)

Accessibility in Software Practice: A Practitioner's Perspective, by BI, Tingting; XIA, Xin; LO, David;

GRUNDY, John C.; ZIMMERMANN, Thomas; FORD, Denae. (2022). *ACM Transactions on Software Engineering and Methodology*, 31 (4), 1-26. <https://doi.org/10.1145/3503508> (Published)

An exploratory study on the repeatedly shared external links on Stack Overflow, by LIU, Jiakun; ZHANG, Haoxiang; XIA, Xin; LO, David; ZOU, Ying; HASSAN, Ahmed E.; LI, Shanping. (2022). *Empirical Software Engineering*, 27 (1), -1. <https://doi.org/10.1007/s10664-021-10028-y> (Published)

Correlating Automated and Human Evaluation of Code Documentation Generation Quality, by HU, Xing; CHEN, Qiuyuan; WANG, Haoye; XIA, Xin; LO, David; ZIMMERMANN, Thomas. (2022). *ACM Transactions on Software Engineering and Methodology*, 31 (4), 2-28. <https://doi.org/10.1145/3502853> (Published)

Orchestration or Automation: Authentication Flaw Detection in Android Apps, by MA, Siqi; LI, Juanru; NEPAL, Surya; OSTRY, Diethelm; LO, David; JHA, Sanjay K.; DENG, Robert H.; BERTINO, Elisa. (2022). *IEEE Transactions on Dependable and Secure Computing*, 19 (4), 2165-2178. <https://doi.org/10.1109/TDSC.2021.3050188> (Published)

CodeMatcher: Searching Code Based on Sequential Semantics of Important Query Words, by LIU, Chao; XIA, Xin; LO, David; LIU, Zhiwei; HASSAN, Ahmed E.; LI, Shanping. (2022). *ACM Transactions on Software Engineering and Methodology*, 31 (1), 1-37. <https://doi.org/10.1145/3465403> (Published)

Predictive Models in Software Engineering: Challenges and Opportunities, by YANG, Yanming; XIA, Xin; LO, David; BI, Tingting; GRUNDY, John C.; YANG, Xiaohu. (2022). *ACM Transactions on Software Engineering and Methodology*, 31 (3), 1-72. <https://doi.org/10.1145/3503509> (Published)

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Mining Temporal Rules from Program Execution Traces, by LO, David; Khoo, Siau-Cheng; LIU, Chao. (2007.0). *Proceedings of the 3rd International Workshop on Program Comprehension through Dynamic Analysis (PCODA)*, Vancouver, Canada: ACM. <http://portal.acm.org/citation.cfm?id=1401838> (Published)

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TreeCaps: Tree-Structured Capsule Networks for program source code processing, by JAYASUNDARA, Vinoj; BUI, Nghi Duy Quoc; JIANG, Lingxiao; LO, David. (2019.0). *Workshop on Machine Learning for Systems at the Conference on Neural Information Processing Systems 33rd NeurIPS 2019, December 8-14*, Vancouver. (Published)

Edited Conference Proceedings

Proceedings of the 25th International Conference on Program Comprehension, ICPC 2017, edited by SCANNIELLO, Giuseppe; LO, David; SEREBRENIK, Alexander. (22/05/2017). Buenos Aires, Argentina: IEEE Press Piscataway. <https://dl.acm.org/citation.cfm?id=3101414&cked=prox> (Published)

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2015 IEEE 15th International Working Conference on Source Code Analysis and Manipulation (SCAM): Proceedings: Bremen, Germany, September 27-28, 2015, edited by GODFREY, Michael W.; LO, David; KHOMH, Foutse. (28/09/2015). Piscataway, NJ: IEEE. <http://worldcat.org/isbn/9781467375290> (Published)

14th IEEE International Conference on Data Mining Workshops: Proceedings: Shenzhen, China, 14 December 2014, edited by LI, Ming; ZHANG, Hongyu; LO, David. (14/12/2014). Piscataway, NJ: IEEE. <http://worldcat.org/isbn/9781479942732> (Published)

Magazine Articles

Improving software quality and productivity leveraging mining techniques: [Summary of the Second Workshop on Software Mining, at ASE 2013], by LI, Ming; ZHANG, Hongyu; LO, David; Lucia. (2015, January). *Software Engineering Notes*, 40 (1), 1-2. <https://doi.org/10.1145/2693208.2693219> (Published)

Other Outputs and Contributions

Reports

Mining Modal Scenarios from Program Execution Traces by LO, David; Khoo, Siau-Cheng. (2007). <http://dl.comp.nus.edu.sg/dspace/bitstream/1900.100/2571/1/trc8-07.pdf> (Published)

Towards better quality specification miners by LO, David; KHOO, Siau-Cheng. (2006). (Published)

Audio / Video Materials

Automating software engineering [Podcast@SMU] [Audio/Video], by LO, David. (2016, July 01). <http://www.smu.edu.sg/podcast/automating-software-engineering> (Published)

Data Sets

Starcraft II in-game action lists [Data set], by GONG, Wei; LIM, Ee Peng; ACHANANUPARP, Palakorn; ZHU, Feida; LO, David; CHUA, Freddy. (2012, June 29). (Published)

Posters

Model checking in the absence of code, model and properties, by LO, David; KHOO, Siau-Cheng. (01 Dec 2007). *Asian Symposium on Programming Languages and Systems 5th APLAS 2007 (Poster Track), November 29 - December 1*, (Published)

Research Grants

Singapore Management University

TrustedSEERs: Trusted Intelligent Work Bots for Engineering Better Software Faster, NRF Investigatorship, National Research Foundation (NRF) , PI (Project Level): David LO, 2023, S\$3,214,978

Titan Code Analysis: Vulnerability Discovery with Large Code Models, Translational R&D 2.0 Grant (TRANS2.0), Smart Nation Group , PI (Project Level): David LO , Co-PI (Project Level): SHAR Lwin Khin, OUH Eng Lieh, 2023

Less is More: Addressing Mobile Application Security and Privacy through Debloating, NCR-TAU Grant Call, Cyber Security Agency of Singapore (CSA) , PI (Project Level): David LO , Co-PI (Project Level): Debin GAO, 2022, S\$599,568

Toward Robust and Adaptable Deep Learning Models of Code, NSERC Canada 2022, S\$26,909.36

The Science of Certified AI Systems, Academic Research Fund (AcRF) Tier 3, Ministry of Education (MOE) , PI (Project Level): SUN Jun , Co-PI (Project Level): David LO, JIANG Lingxiao, 2021, S\$9,340,776

Trust to Train and Train to Trust: Agent Training Programs for Safety-Critical Environments, AI Singapore Research Programme, AI Singapore , PI (Project Level): Pradeep Reddy VARAKANTHAM , Co-PI (Project Level): Akshat KUMAR, Arunesh SINHA, David LO, 2021, S\$6,086,963.76

Reducing COVID-19 Vaccine Hesitancy by Integrating Public Sentiments in Vaccine Communication: A Machine Learning Framework, Regional Collaborations Programme COVID-19 Digital Grants, Australia Academy of Science 2021

Making Big Code Active: From Billions of Code Tokens to Automation, International Research Collaboration Grant, Singapore Data Science Consortium , PI (Project Level): David LO , Co-PI (Project Level): JIANG Lingxiao, 2020, S\$631,344

Uncovering Vulnerabilities in Machine Learning Frameworks via Software Composition Analysis and Directed Grammar-Based Fuzzing, NSoE TSS Grant Call, National Satellite of Excellence - Trustworthy Software Systems , PI (Project Level): David LO , Co-PI (Project Level): JIANG Lingxiao, 2020, S\$550,000

Research Programme on Computational Law, Smart Systems Strategic Research Programme, Industry Alignment Fund – Pre-Positioning (IAF-PP) Funding Initiative, Info-communications Media Development Authority of Singapore (IMDA) , PI (Project Level): WONG Meng Weng , Co-PI (Project Level): GOH Yihan, SC, LAU Kwan Ho, LIM How Khang, Jerrold SOH, 2019, S\$15,189,082

DeepSense: Deep Media Sensing for Software API Recommendation, Academic Research Fund (AcRF) Tier 2, Ministry of Education (MOE) , PI (Project Level): David LO , Co-PI (Project Level): JIANG Lingxiao, 2019, S\$723,960

Enhanced function signature recovery for control-flow integrity enforcement on compiler optimized executables, NSoE TSS Grant Call, National Satellite of Excellence - Trustworthy Software Systems , PI (Project Level): Debin GAO , Co-PI (Project Level): David LO, 2019, S\$714,780

AutoPrivacyModel: Automated Feature Modelling for Identifying Illegitimate Uses of Privacy-Sensitive Data in Mobile Applications, NSoE MSS-CS Research Programme, National Satellite of Excellence - Mobile Systems Security and Cloud Security , PI (Project Level): JIANG Lingxiao , Co-PI (Project Level): David LO, SHAR Lwin Khin, DING Xuhua, Debin GAO, 2019, S\$700,403

Detecting Technical Debt with Natural Language Processing, Academy of Finland 2019, S\$621,160

Intelligent and non-intrusive monitoring of Android devices for protection against data-infringing malware, AI Singapore 100 Experiments, AI Singapore , PI (Project Level): Debin GAO , Co-PI (Project Level): David LO, Robert H DENG, 2018, S\$479,616

Automatic Inference of Software Transformation Rules for Automatically Back and Forward Porting Legacy Infrastructure Software (Itrans), NRF-ANR Joint Grant Call, National Research Foundation (NRF) , PI (Project Level): David LO , Co-PI (Project Level): JIANG Lingxiao, 2016, S\$428,137.2

Safety and Privacy of Smart-City Mobile Applications through Model Inference, National Cybersecurity R&D (NCR) Programme, National Research Foundation (NRF) , PI (Project Level): David LO , Co-PI (Project Level): Debin GAO, 2016, S\$399,984

Secure Mobile Centre - Technologies and Solutions for Securing Mobile Computing, National Cybersecurity R&D (NCR) Programme, National Research Foundation (NRF) , PI (Programme Level): Robert H DENG , PI (Project Level): DING Xuhua, Debin GAO, JIANG Lingxiao, LI Yingjiu, David LO, PANG Hwee Hwa, 2014, S\$6,415,200

Improving Clone Detection for Systems Software, Merlion Programme, Republique Francaise, Institut Français de Singapour , PI (Project Level): David LO , Co-PI (Project Level): JIANG Lingxiao, 2012, S\$24,300

Operationalising “Responsible Artificial Intelligence” (RAI) in Public Administration, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): Jason Grant ALLEN , Co-PI (Project Level): David LO, 2023, S\$250,000

A-Things: Anomaly Analysis of the Internet of Things Applications, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): SHAR Lwin Khin , Co-PI (Project Level): David LO, JIANG Lingxiao, 2020, S\$99,057

Designing inclusive organizations: A cross-disciplinary approach, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): Marko PITESA , Co-PI (Project Level): Gokhan ERTUG, 2019, S\$128,510

Testing and Verification of Artificial Intelligence Systems, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): David LO , Co-PI (Project Level): JIANG Lingxiao, SUN Jun, 2019, S\$468,035

Semantic-Directed Deep Code Encoding for Smart Contract Debugging, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): JIANG Lingxiao , Co-PI (Project Level): David LO, 2017, S\$149,370

Software Reuse Insights for IT Businesses through Software Library Recommendation, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): David LO , Co-PI (Project Level): JIANG Lingxiao, 2016, S\$109,584

User-Centric Mobile Authentication Mechanisms, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): Rajesh Krishna BALAN, 2009, S\$9,408

Other Institutions

Making Software Development Language-Agnostic through Cross-Language Mapping and Migration, International Exchanges, The Royal Society PI (Project Level): JIANG Lingxiao, WANG Meng, Co-PI (Project Level): David LO, BUI DUY QUOC NGHI, Steven Ramsay, 2020, GBP12,000

vSCA: Scalable Code Analysis via Vector Abstraction and Concretization, MOE AcRF Tier 1, National University of Singapore PI (Project Level): David LO, KHOO Siau-Cheng, Co-PI (Project Level): JIANG Lingxiao, 2014, SGD130,000

Modeling Group Learning Phenomena and Effects in Open-Source Software Developments, Internal Research Centre, Internal Research Centre, SIS, SMU PI (Project Level): David LO, Co-PI (Project Level): JIANG Lingxiao, 2013

Automated Bug Fixing Assistant, Internal Research Centre, Internal Research Centre, SIS, SMU PI (Project Level): David LO, Co-PI (Project Level): JIANG Lingxiao, 2013

TEACHING

Courses Taught

Singapore Management University

Undergraduate Programmes :

- IS Project Experience (Research)
- Web Application Development I

Postgraduate Professional Programmes :

- Capstone Project - Cybersecurity
- Capstone Project - Data Science and Engineering
- Capstone Project - Software and Cyber-Physical Systems

Postgraduate Research Programmes :

- Empirical Research Project 1
- Empirical Research Project 2
- Empirical Research Project 3

Empirical Research Project 4
 Empirical Research Project I
 Empirical Research Project II
 Empirical Research Project III
 Software Mining and Analysis

THESES AND DISSERTATIONS

Theses and Dissertations Supervised

Singapore Management University

Supervisor, "Making Sense of Crowd-Generated Content in Domain-Specific Settings", Dissertation by AGUS SULISTYA, PhD in Information Systems, Singapore Management University, 2019

Supervisor, "Social Software Development: Insights and Solutions", Dissertation by ABHISHEK SHARMA, PhD in Information Systems, Singapore Management University, 2019

Supervisor, "Overfitting in Automated Program Repair: Challenges and Solutions", Dissertation by LE DINH XUAN BACH, PhD in Information Systems, Singapore Management University, 2018

Supervisor, "Recommending APIs for Software Evolution", Dissertation by FERDIAN THUNG, PhD in Information Systems, Singapore Management University, 2018

Supervisor, "Fusion Based Approaches for Software Fault Localization and Specification Mining", Dissertation by LE BUI TIEN DUY, PhD in Information Systems, Singapore Management University, 2017

Supervisor, "Testing and Debugging: A Reality Check", Dissertation by PAVNEET SINGH KOCHHAR, PhD in Information Systems, Singapore Management University, 2017

Supervisor, "Mining Bug Repositories for Automatic Software Bug Management: From Bug Triaging to Patch Backporting", Dissertation by TIAN YUAN, PhD in Information Systems, Singapore Management University, 2017

Supervisor, "Multimodal Code Search", Dissertation by WANG SHAOWEI, PhD in Information Systems, Singapore Management University, 2015

Supervisor, "Ranking-based Approaches for Localizing Faults", Dissertation by LUCIA, PhD in Information Systems, Singapore Management University, 2014

Other Institutions

Supervisor, "Statistical And Deep Learning Models For Software Engineering Corpora", Dissertation by HOANG Van Duc Thong, Singapore Management University, 2020

Theses and Dissertations Assessed

Singapore Management University

Committee Member, "Modeling Sequential and Basket-Oriented Associations for Top-K Recommendation", Dissertation by LE DUC TRONG, PhD in Information Systems, Singapore Management University, 2019

Committee Member, "Automatic Vulnerability Detection and Repair", Dissertation by MA SIQI, PhD in Information Systems, Singapore Management University, 2018

Committee Member, "Entity Summarization of Review and Micro-Reviews", Dissertation by NGUYEN THANH SON, PhD in Information Systems, Singapore Management University, 2018

Committee Member, "Scalable Online Kernel Learning", Dissertation by LU JING, PhD in Information Systems, Singapore Management University, 2018

Committee Member, "Mining Diverse Consumer Preferences for Bundling and Recommendation", Dissertation by DO HA LOC, PhD in Information Systems, Singapore Management University, 2017

Committee Member, "Aspect Discovery from Product Reviews", Dissertation by DING YING, PhD in Information Systems, Singapore Management University, 2017

Committee Member, "Probabilistic Models for Semantic Visualization and its Applications", Dissertation by LE VAN MINH TUAN, PhD in Information Systems, Singapore Management University, 2017

Committee Member, "Modeling Adoption Dynamics in Social Networks", Dissertation by LUU MINH DUC, PhD in Information Systems, Singapore Management University, 2017

Committee Member, "Profiling Social Media Users with Selective Self-disclosure Behaviour", Dissertation by GONG WEI, PhD in Information Systems, Singapore Management University, 2016

Committee Member, "Mining User Viewpoints in Online Discussions", Dissertation by QIU MINGHUI, PhD in Information Systems, Singapore Management University, 2015

Committee Member, "Generic Instance-specific Automated Parameter Tuning Framework", Dissertation by LINDAWATI, PhD in Information Systems, Singapore Management University, 2014

Committee Member, "Social Correlation in Latent Spaces for Complex Networks", Dissertation by CHUA CHONG TAT FREDDY, PhD in Information Systems, Singapore Management University, 2014

Committee Member, "Novel Techniques of Using Diversity in Software Security and Information Hiding", Dissertation by HAN JIN, PhD in Information Systems, Singapore Management University, 2012

Committee Member, "Predictive Modeling for Navigating Social Media", Dissertation by HU MEIQUN, PhD in Information Systems, Singapore Management University, 2012

EXTERNAL SERVICE – PROFESSIONAL

Program Co-Chair, 47th IEEE/ACM International Conference on Software Engineering (ICSE 2025), 2025

Member, ACM Doctoral Dissertation Award Committee, Association for Computing Machinery (ACM), 2024 - 2027

Member, IEEE CS Fellow Search Committee, Institute of Electrical and Electronics Engineering (IEEE), 2024 - 2025

Program Co-Chair, 32nd ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (FSE 2024), 2024

Treasurer, Secretary, and Student Mentorship and Support Portfolio Chair, ACM SIGSOFT Executive Committee, Association for Computing Machinery (ACM), 2024 - 2027

Founding General Co-Chair, IEEE/ACM First International Conference on AI Foundation Models and Software Engineering (FORGE 2024), 2024

Co-Chair, New Faculty Symposium, 46th IEEE/ACM International Conference on Software Engineering (ICSE 2024), 2024 - Present

Committee/Board Member, 39th IEEE/ACM International Conference on Automated Software Engineering (ASE 2024), 46th ACM/IEEE International Conference on Software Engineering (ICSE 2024) [Main Track, SE in Society Track], 1st International Workshop on Large Language Models for Code (LLM4Code), 1st ACM International Conference on AI-Powered Software (AIWare 2024), Institute of Electrical and Electronics Engineers or Association for Computing Machinery (IEEE/ACM), 2024

Committee Member, MOE Translational R&D and Innovation Fund Evaluation Panel, Ministry of Education, 2023 - 2026

Ideas, Vision, and Reflection (IVR) Track Co-Chair, 31st ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2023), 2023

Early Research Achievement (ERA) Track Co-Chair, 30th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER 2023), 2023

Test of Time Award Selection Committee Co-Chair, 31st ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2023), 2023

Artifact Evaluation Track and ROSE Festival Co-Chair, 39th IEEE International Conference on Software Maintenance and Evolution (ICSME 2023), 2023

Area Co-Chair (AI and Software Engineering, 45th ACM/IEEE International Conference on Software Engineering (ICSE 2023), 2023

Associate Editor, ACM Computing Surveys, Association of Computing Machinery (ACM), 2022 - Present

Sponsorship Co-Chair, 30th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2022), 2022

Committee/Board Member, 1st ACM/IEEE International Conference on AI Engineering - Software Engineering for AI (CAIN 2022), 15th IEEE International Conference on Software Testing (ICST 2022), 22nd IEEE International Conference on Software Quality, Reliability, and Security (QRS 2022), 14th Asia-Pacific Symposium on Internetware (Internetware 2022), 27th International Conference on Engineering of Complex Computer Systems (ICECCS 2022), 1st ACM/IEEE International Workshop on Software Engineering for Responsible Artificial Intelligence (SE4RAI 2022), Institute of Electrical and Electronics Engineers or Association for Computing Machinery (IEEE/ACM), 2022

Committee/Board Member, 44th ACM/IEEE International Conference on Software Engineering (ICSE 2022) [Main Track, Doctoral Symposium Track], 37th IEEE/ACM International Conference on Automated Software Engineering (ASE 2022) [Main Track, Student Research Competition Track], 36th AAI Conference on Artificial Intelligence (AAI 2022; Senior PC), 28th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2022), 31st International Joint Conference on Artificial Intelligence (IJCAI 2022), 29th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER 2022), 29th Asia-Pacific Software Engineering Conference (APSEC 2022), Institute of Electrical and Electronics Engineers or Association for Computing Machinery (IEEE/ACM), 2022

General Chair, 19th ACM/IEEE International Conference on Mining Software Repositories (MSR 2022), 2022

Associate Editor, Communications of the ACM, Association of Computing Machinery (ACM), 2022 - Present

Co-Organizer, 2021 KDD Workshop on Programming Language Processing (PLP 2021), 2021

Vice Chairman, Steering Committee, IEEE/ACM International Conference on Automated Software Engineering (ASE), 2021 - Present

Chair, ACM SIGSOFT Awards, Association for Computing Machinery (ACM), 2021 - 2024

Member, SIGSOFT Executive Committee, Association for Computing Machinery (ACM), 2021 - 2024

Co-Organizer, 3rd International Workshop on Machine Learning Systems Engineering (iMLSE 2021), 2021

Doctoral Symposium Co-Chair, 29th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2021), Institute of Electrical and Electronics Engineers or Association for Computing Machinery (IEEE/ACM), 2021

Associate Editor, Automated Software Engineering, Springer, 2021 - Present

Committee/Board Member, 21th IEEE International Conference on Software Quality, Reliability, and Security (QRS 2021), 28th Asia-Pacific Software Engineering Conference (APSEC 2021), 14th IEEE International Conference on Software Testing (ICST 2021) [Main Track, Tool Track], 14th Innovations in Software Engineering Conference (ISEC 2021), ACM Student Research Competition Grand Final, 21th International Conference on Runtime Verification (RV 2021), International Workshop on Software Architecture and Machine Learning (SAML 2021), Workshop on Software Engineering and AI for Data Quality in Cyber-Physical Systems (SEA4DQ 2021), Workshop on AI Engineering: Software Engineering for AI (WAIN 2021), Institute of Electrical and Electronics Engineers or Association for Computing Machinery (IEEE/ACM), 2021

Journal First Co-Coordinator, 29th IEEE/ACM International Conference on Program Comprehension (ICPC 2021), Institute of Electrical and Electronics Engineers or Association for Computing Machinery (IEEE/ACM), 2021

Selection Committee Member, ACM SIGSOFT Outstanding Dissertation Award, Association of Computing Machinery (ACM), 2021

Selection Committee Member, ACM SIGSOFT Influential Educator Award, Association for Computing Machinery (ACM), 2021

Most Influential Paper Co-Chair, 36th IEEE/ACM International Conference on Automated Software Engineering (ASE 2021), Institute of Electrical and Electronics Engineers or Association for Computing Machinery (IEEE/ACM), 2021

Registered Report Co-Chair, 18th ACM/IEEE International Conference on Mining Software Repositories (MSR 2021), Institute of Electrical and Electronics Engineers or Association for Computing Machinery (IEEE/ACM), 2021

Committee/Board Member, 27th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2021), 35th AAAI Conference on Artificial Intelligence (AAAI 2021), 36th IEEE/ACM International Conference on Automated Software Engineering (ASE 2021), 43rd ACM/IEEE International Conference on Software Engineering (ICSE 2021) [NIER Track], 37th IEEE International Conference on Software Maintenance and Evolution (ICSME 2021), 28th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER 2021), 29th IEEE/ACM International Conference on Program Comprehension (ICPC 2021) [Most Influential Paper Track], Institute of Electrical and Electronics Engineers or Association for Computing Machinery (IEEE/ACM), 2021

Committee/Board Member, 42nd ACM/IEEE International Conference on Software Engineering (ICSE 2020) [Main Track, Workshop Track, Student Research Competition Track], 14th Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE 2020) [Main Track, Doctoral Symposium Track], ACM Student Research Competition Grand Final, 26th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2020), 29th International Joint Conference on Artificial Intelligence (IJCAI 2020), 40th IEEE International Conference on Distributed Computing Systems (ICDCS 2020), 25th International Conference on Engineering of Complex Computer Systems (ICECCS 2020), 20th International Conference on Runtime Verification (RV 2020), 17th ACM/IEEE International Conference on Mining Software Repositories (MSR 2020), 20th IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM 2020), Institute of Electrical and Electronics Engineers or Association for Computing Machinery (IEEE/ACM), 2020

Co-Editor-in-Chief, Journal of Software Engineering Research and Development, 2020 - Present

Committee/Board Member, IEEE International Conference on Software Quality, Reliability, and Security (QRS 2020), 27th Asia-Pacific Software Engineering Conference (APSEC 2020), IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER 2020), IEEE International Conference on Software Testing (ICST 2020), 36th IEEE International Conference on Software Maintenance and Evolution (ICSME 2020), 12th Asia-Pacific Symposium on Internetwork (Internetwork 2020), Institute of Electrical and Electronics Engineers or Association for Computing Machinery (IEEE/ACM), 2020

Associate Editor, IEEE Transactions on Software Engineering, 2020 - 2024

Workshop Co-Chair, The ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE), 2020

Poster Co-Chair, IEEE International Conference on Software Testing, Verification and Validation (ICST), 2020

Journal First Co-Chair, IEEE International Conference on Software Maintenance and Evolution (ICSME), 2020

General Chair, 7th IEEE/ACM International Conference on Mobile Software Engineering and Systems (MOBILESoft), 2020

PC Co-Chair, 13th Innovations in Software Engineering Conference (ISEC), 2020

Committee Chair, 35th IEEE/ACM International Conference on Automated Software Engineering (ASE), Institute of Electrical and Electronics Engineers or Association for Computing Machinery (IEEE/ACM), 2020

Associate Editor, IEEE Transactions on Reliability, 2019 - Present

Committee Chair, 19th IEEE International Conference on Software Quality, Reliability, and Security (QRS 2019), Institute of Electrical and Electronics Engineers (IEEE), 2019

Publicity Co-Chair, 13th ACM/IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM), Institute of Electrical and Electronics Engineers or Association for Computing Machinery (IEEE/ACM), 2019

Journal First Co-Coordinator, 13th Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE 2019), Institute of Electrical and Electronics Engineers (IEEE/ACM), 2019

Workshop Co-Chair, ACM/IEEE International Conference on Software Engineering (ICSE 2019), Institute of Electrical and Electronics Engineers (IEEE), 2019

Tool Demonstration Co-Chair, 34th IEEE/ACM International Conference on Automated Software Engineering (ASE 2019), Institute of Electrical and Electronics Engineers or Association for Computing Machinery (IEEE/ACM), 2019

Committee Chair, 26th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER 2019), Institute of Electrical and Electronics Engineers (IEEE), 2019

Committee/Board Member, 24th International Conference on Engineering of Complex Computer Systems (ICECCS 2019), Annual Conference on Software Analysis, Testing and Evolution (SATE 2019), 19th International Conference on Runtime Verification (RV 2019), 10th IEEE International Workshop on Empirical Software Engineering in Practice (IWESEP 2019), ACM Student Research Competition Grand Final, 25th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2019), Institute of Electrical and Electronics Engineers or Association for Computing Machinery (IEEE/ACM), 2019

Committee/Board Member, 41st ACM/IEEE International Conference on Software Engineering (ICSE 2019) [Main Track, Student Research Competition Track], 13th Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE 2019) [Main Track, Student Research Competition Track], 34th IEEE/ACM International Conference on Automated Software Engineering (ASE 2019), 16th ACM/IEEE International Conference on Mining Software Repositories (MSR 2019) [Data Showcase Track], 27th IEEE/ACM International Conference on Program Comprehension (ICPC 2019) [Replication Track], 28th International Joint Conference on Artificial Intelligence (IJCAI 2019), 19th IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM 2019), Institute of Electrical and Electronics Engineers or Association for Computing Machinery (IEEE/ACM), 2019

Registration Chair, IEEE International Conference on Data Mining (ICDM 2018), Institute of Electrical and Electronics Engineers (IEEE), 2018

Vice Co-Chair, 5th International Conference on Dependable Systems and Their Applications (DSA 2018), Institute of Electrical and Electronics Engineers (IEEE), 2018

Program Co-Chair, IEEE International Conference on Software Maintenance and Evolution (ICSME 2018), Institute of Electrical and Electronics Engineers (IEEE), 2018

Publicity Chair, IEEE International Conference on Software Quality, Reliability and Security (QRS 2018), Institute of Electrical and Electronics Engineers (IEEE), 2018

Committee/Board Member, 40th ACM/IEEE International Conference on Software Engineering (ICSE 2018) [Main Track, NIER Track, Tool Track, Student Research Competition Track], 12th Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE 2018) [Main Track, Artifact Track, Tool Track], 33rd IEEE/ACM International Conference on Software Engineering (ASE 2018), 22nd International Conference on Evaluation and Assessment in Software Engineering (EASE 2018) [Short Paper Track], IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER 2018) [Industry Track], 15th International Conference on Mining Software Repositories (MSR 2018), 27th International Joint Conference on Artificial Intelligence (IJCAI 2018), 32nd AAAI Conference on Artificial Intelligence (AAAI 2018), 24th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2018), Institute of Electrical and Electronics Engineers or Association for Computing Machinery (IEEE/ACM), 2018

Co-Organizer, 7th International Workshop on Software Mining (SoftwareMining 2018), 2018

Committee Member, 18th IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM 2018), 12th International Symposium on Empirical Software Engineering and Measurement 2018 (ESEM 2018) [Industry Track], 17th National Software Application Conference (NASAC 2018), 23rd International Conference on Engineering of Complex Computer Systems (ICECCS 2018), Annual Conference on Software Analysis, Testing and Evolution (SATE 2018), 18th International Conference on Runtime Verification (RV 2018), IEEE International Conference on Software Quality, Reliability, and Security (QRS 2018), 1st International Workshop on Machine Learning Systems Engineering (iMLSE 2018), 2018 IEEE International Workshop on Debugging and Repair (IDEAR 2018), 9th IEEE International Workshop on Empirical Software Engineering in Practice (IWESEP 2018), 4th International Workshop on Software Analytics (SWAN 2018), ACM Student Research Competition Grand Final, Institute of Electrical and Electronics Engineers or Association for Computing Machinery (IEEE/ACM), 2018

Editorial Board Member, Information and Software Technology, Elsevier, 2017 - Present

Tool Demonstration Co-Chair, 32nd IEEE/ACM International Conference on Automated Software Engineering (ASE 2017), Institute of Electrical and Electronics Engineers (IEEE), 2017

Doctoral Symposium Co-Chair, 33rd IEEE International Conference on Software Engineering (ICSME 2017), Institute of Electrical and Electronics Engineers (IEEE), 2017

Committee Member, 32nd IEEE/ACM International Conference on Automated Software Engineering (ASE 2017) [Main Track, Doctoral Symposium Track], 21st Evaluation and Assessment in Software Engineering Conference (EASE 2017) [Short Paper Track], 33rd IEEE International Conference on Software Engineering (ICSME 2017) [NIER track], 24th Asia-Pacific Software Engineering Conference (APSEC 2017), 17th International Conference on Runtime Verification (RV 2017), 21st Computer Science and Software Engineering Conference (CSSE 2017), 22nd International Conference on Engineering of Complex Computer Systems (ICECCS 2017), 17th IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM 2017), 11th International Symposium on Empirical Software Engineering and Measurement (ESEM 2017) [Industry Track, Poster and Short Paper Track], 11th Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE 2017) [Artifact Track], Institute of Electrical and Electronics Engineers (IEEE)/ACM, 2017

PC Co-Chair, 25th International Conference on Program Comprehension (ICPC 2017), Institute of Electrical and Electronics Engineers (IEEE), 2017

Selection Committee Member, Technical Council on Software Engineering (TCSE) Distinguished Service Award, Institute of Electrical and Electronics Engineers (IEEE), 2017

Local Arrangement Co-Chair, 13th International Conference on Advanced Data Mining and Applications (ADMA 2017), 2017

Program Co-Chair, 25th IEEE International Conference on Program Comprehension (ICPC 2017), Institute of Electrical and Electronics Engineers (IEEE), 2017

Doctoral Symposium Co-Chair, 33rd International Conference on Software Maintenance and Evolution (ICSME 2017), Institute of Electrical and Electronics Engineers (IEEE), 2017

Co-Organizer, 6th International Workshop on Software Mining (SoftwareMining 2017), 2017

Committee Member, ACM Student Research Competition Final (ACM SRC 2017), 14th International Conference on Mining Software Repositories (MSR 2017), 23rd ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2017), 4th International Workshop on Software Engineering Research and Industrial Practice (SER&IP 2017), 24th IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER 2017) [Main Track, Industry Track], IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC 2017), 26th International Joint Conference on Artificial Intelligence (IJCAI 2017), Institute of Electrical and Electronics Engineers (IEEE)/ACM, 2017

Editorial Board Member, Journal of Software: Evolution and Process, Wiley, 2017 - Present

Publicity Co-Chair, 28th International Symposium on Software Reliability Engineering (ISSRE 2017), Institute of Electrical and Electronics Engineers (IEEE), 2017

Local Arrangement Co-Chair, 26th International Conference on Information and Knowledge Management (CIKM 2017), ACM, 2017

Editorial Board Member, Information Systems, Elsevier, 2016 - Present

Chairperson, 31st International Conference on Automated Software Engineering (ASE 2016), Institute of Electrical and Electronics Engineers (IEEE)/ACM, 2016

Short Paper Track Co-Chair, 24th International Conference on Program Comprehension (ICPC 2016), Institute of Electrical and Electronics Engineers (IEEE), 2016

Technology Briefings Co-Chair, 32nd International Conference on Software Maintenance and Evolution (ICSME 2016), Institute of Electrical and Electronics Engineers (IEEE), 2016

Committee Member, 38th ACM/IEEE International Conference on Software Engineering (ICSE 2016), 24th IEEE International Conference on Program Comprehension (ICPC 2016), 7th International Workshop on Empirical Software Engineering in Practice (IWESEP 2016), 31st ACM Symposium on Applied Computing (SAC 2016) [Software Engineering Track], 22nd ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2016), 16th SIAM International Conference on Data Mining (SDM 2016), 13th IEEE/ACM Working Conference on Mining Software Repositories (MSR 2016), 23rd IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER 2016) [Main Track, ERA Track, Industry Track], Institute of Electrical and Electronics Engineers (IEEE)/ACM, 2016

Publicity Co-Chair, 23rd International Conference on Software Analysis, Evolution and Reengineering (SANER 2016), Institute of Electrical and Electronics Engineers (IEEE), 2016

Associate Editor, Empirical Software Engineering, Springer, 2015 - Present

Committee Member, 22nd International Conference on Software Analysis, Evolution and Reengineering (SANER 2015) [Main Track, Tool Track], Institute of Electrical and Electronics Engineers (IEEE), 2015

Committee Member, 22nd Asia-Pacific Software Engineering Conference (APSEC 2015), APSEC 2015, 2015

PC Co-Chair, 15th Working Conference on Source Code Analysis and Manipulation, Institute of Electrical and Electronics Engineers (IEEE), 2015

Committee Member, 19th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2015), PAKDD 2015, 2015

Committee Member, 23rd International Conference on Program Comprehension (ICPC 2015), Institute of Electrical and Electronics Engineers (IEEE), 2015

Committee Member, 30th International Conference on Automated Software Engineering (ASE 2015), Institute of Electrical and Electronics Engineers (IEEE)/ACM, 2015

Committee Member, 21st SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2015), ACM, 2015

Committee Member, 20th International Conference on Engineering of Complex Computer Systems (ICECCS 2015), ICECCS 2015, 2015

Committee Member, 9th International Symposium on Empirical Software Engineering and Measurement (ESEM 2015) [Industry Track], ESEM 2015, 2015

Committee Member, 5th Workshop on Mining Unstructured Data (MUD 2015), 2015

Workshop Co-Chair, 30th International Conference on Automated Software Engineering (ASE 2015), Institute of Electrical and Electronics Engineers (IEEE)/ACM, 2015

Committee Member, Working Conference on Source Code Analysis and Manipulation (for 3 years), Institute of Electrical and Electronics Engineers (IEEE), 2015

Committee Member, 31st International Conference on Software Maintenance and Evolution (ICSME) [Main Track, ERA Track], Institute of Electrical and Electronics Engineers (IEEE), 2015

Committee Member, 37th International Conference on Software Engineering (ICSE 2015), Institute of Electrical and Electronics Engineers (IEEE)/ACM, 2015

Committee Member, 30th Symposium on Applied Computing (SAC 2015) [Software Engineering Track], ACM, 2015

Committee Member, 12th Working Conference on Mining Software Repositories (MSR 2015) [Data Track], Institute of Electrical and Electronics Engineers (IEEE)/ACM, 2015

Committee Member, 22nd SIGSOFT Symposium on Foundations on Software Engineering (FSE 2014) [SRC Track], ACM, 2014

Committee Member, 37th International Conference on Software Engineering (ICSE 2014) [Mentoring], Institute of Electrical and Electronics Engineers (IEEE)/ACM, 2014

Committee Member, 3rd Workshop on Graph Inspection and Traversal Engineering (GRAPHITE 2014), European Joint Conferences on Theory and Practice of Software (ETAPS), 2014

Committee Member, 22nd International Conference on Program Comprehension (ICPC 2014), ICPC 2014, 2014

Committee Member, 19th International Conference on Engineering Complex Computer System (ICECCS 2014), ICECCS 2014, 2014

Committee Member, 30th International Conference on Software Maintenance and Evolution (ICSME 2014), Institute of Electrical and Electronics Engineers (IEEE), 2014

Committee Member, Joint Meeting of the 18th European Conference on Software Maintenance and Reengineering (CSMR 2014) and the 21st Working Conference on Reverse Engineering (WCRE 2014) [Main track, Project track], CSMR/WCRE, 2014

Committee Member, 29th International Conference on Automated Software Engineering (ASE 2014), Institute of Electrical and Electronics Engineers (IEEE)/ACM, 2014

Committee Member, International Conference on Software Analysis, Evolution and Reengineering (SANER) (for 3 years), Institute of Electrical and Electronics Engineers (IEEE), 2014

Committee Member, 20th SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2014), ACM, 2014

Committee Member, 11th Working Conference on Mining Software Repository (MSR 2014), MSR 2014, 2014

Associate Editor, Neurocomputing Journal (Software Section), Elsevier, 2014 - 2024

Committee Member, 14th International Conference on Data Mining (SDM 2014), Society for Industrial and Applied Mathematics (SIAM), 2014

Committee Member, 18th Pacific/Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2014), PAKDD 2014, 2014

Committee Member, Workshop on Data Analysis Patterns in Software Engineering (DAPSE 2014), DAPSE 2014, 2014

Workshop and Tutorial Co-Chair, 28th IEEE/ACM International Conference on Automated Software Engineering (ASE 2013), Institute of Electrical and Electronics Engineers (IEEE)/ACM, 2013

Committee Member, 20th Working Conference on Reverse Engineering (WCRE 2013), WCRE 2013, 2013

Committee Member, 28th International Conference on Automated Software Engineering (ASE 2013), Institute of Electrical and Electronics Engineers (IEEE)/ACM, 2013

Committee Member, 10th Working Conference on Mining Software Repository (MSR 2013), MSR 2013, 2013

Committee Member, 17th Pacific/Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2013), PAKDD 2013, 2013

Committee Member, 13th Working Conference on Source Code Analysis and Manipulation (SCAM 2013) [Tool track], Institute of Electrical and Electronics Engineers (IEEE), 2013

Committee Member, 1st Workshop on Natural Language Analysis in Software Engineering (NaturaLiSE 2013), 1st Workshop on Natural Language Analysis in Software Engineering (NaturaLiSE 2013), 2013

Committee Member, 30th International Conference on Software Maintenance and Evolution (ICSM 2013), Institute of Electrical and Electronics Engineers (IEEE), 2013

Committee Member, 19th SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2013), ACM, 2013

Other, 21st International Conference on Program Comprehension (ICPC 2013) [Main track, ERA track], ICPC 2013, 2013

Committee Member, 34th International Conference on Software Engineering (ICSE 2012) [Informal Demo and Poster Track], ICSE 2012, 2012

Committee Member, 27th International Conference on Automated Software Engineering (ASE 2012), Institute of Electrical and Electronics Engineers (IEEE)/ACM, 2012

Committee Member, 28th International Conference on Software Maintenance (ICSM 2012) [ERA Track], ICSM 2012, 2012

Co-Chair, 1st International Workshop on Software Mining (SoftMine 2012), co-located with 18th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2012), ACM, 2012

Committee Member, 16th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2012), 16th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2012), 2012

Committee Member, 9th International Conference on Mining Software Repository (MSR 2012), 9th International Conference on Mining Software Repository (MSR 2012), 2012

Sponsorship Chair, 4th Asian Conference on Machine Learning (ACML 2012), 4th Asian Conference on Machine Learning (ACML 2012), 2012

Tool Demo Co-Chair, 19th Working Conference on Reverse Engineering (WCRE 2012), 19th Working Conference on Reverse Engineering (WCRE 2012), 2012

Committee Member, 26th International Conference on Automated Software Engineering (ASE 2011), Institute of Electrical and Electronics Engineers (IEEE)/ACM, 2011

Committee Member, 9th International Workshop on Dynamic Analysis (WODA 2011), 9th International Workshop on Dynamic Analysis (WODA 2011), 2011

Committee Member, 18th Working Conference on Reverse Engineering (WCRE 2011), Institute of Electrical and Electronics Engineers (IEEE), 2011

Committee Member, 8th International Conference on Mining Software Repository (MSR 2011), 8th International Conference on Mining Software Repository (MSR 2011), 2011

Committee Member, 17th SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2011) [Industry Track], ACM, 2011

Committee Member, 27th International Conference on Software Maintenance (ICSM 2011) [ERA Track], 27th International Conference on Software Maintenance (ICSM 2011) [ERA Track], 2011

Sponsorship/Exhibition Co-Chair, 3rd International Conference on Social Informatics (SocInfo 2011), 3rd International Conference on Social Informatics (SocInfo 2011), 2011

Committee Member, 16th SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2010), ACM, 2010

Committee Member, 21st International Symposium on Software Reliability Engineering (ISSRE 2010) [Poster Track], Institute of Electrical and Electronics Engineers (IEEE), 2010

Reviewer Journal Article, TSE, TOSEM, JSS, ASE J., TKDE, VLDB J., etc., 2009 - Present