HUO Yintong

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Education

PhD, Chinese University of Hong Kong, China, 2024

Bachelor of Engineering, University of Electronic Sci. & Tech. of China, China, 2020

Academic Appointments

Assistant Professor of Computer Science, School of Computing and Information Systems, SMU, Jan 2025 - Present

RESEARCH

Publications

Journal Articles [Refereed]

LogUpdater: Automated detection and repair of specific defects in logging statements, by ZHONG, Renyi; LI, Yichen; KUANG, Jinxi; GU, Wenwei; HUO, Yintong; LYU, R. Michael. (2025). *ACM Transactions on Software Engineering and Methodology, 35* (1), 1-31. https://doi.org/10.1145/3731754 (Published)

Divide-and-conquer: Generating UI code from screenshots, by WAN, Yuxuan; WANG, Chaozheng; DONG, Yi; WANG, Wenxuan; LI, Shuqing; HUO, Yintong; LYU, Michael. (2025). *Proceedings of the ACM on Software Engineering, 2* (FSE094), 2099-2122. https://doi.org/10.1145/3729364 (Published)

KPIRoot+: An efficient integrated framework for anomaly detection and root cause analysis in large-scale cloud systems, by GU, Wenwei; ZHONG, Renyi; YU, Guangba; SUN, Xinying; LIU, Jinyang; HUO, Yintong; CHEN, Zhuangbin; ZHANG, Jianping; GU, Jiazhen; YANG, Yongqiang; LYU, Michael R.. (2025). *Empirical Software Engineering, 50* (12), 3188-3207. https://doi.org/10.1109/TSE.2024.3475375 (Published)

Larger is not always better: Exploring small open-source language models in logging statement generation, by ZHONG, Renyi; LI, Yichen; YU, Guangba; GU, Wenwei; KUANG, Jinxi; HUO, Yintong; LYU, Michael R.. (2025). *ACM Transactions on Software Engineering and Methodology,* 1-40. https://doi.org/10.1145/3773287 (Advance Online)

Exploring the effectiveness of LLMs in automated logging statement generation: An empirical study, by LI, Yichen; HUO, Yintong; JIANG, Zhihan; ZHONG, Renyi; HE, Pinjia; SU, Yuxin; BRIAND, Lionel C.; LYU, Michael R.. (2024). *IEEE Transactions on Software Engineering, 50* (12), (Published)

LILAC: Log parsing using LLMs with adaptive parsing cache, by JIANG, Zhihan; LIU, Jinyang; CHEN, Zhuangbin; LI, Yichen; HUANG, Junjie; HUO, Yintong; HE, Pinjia; GU, Jiazhen; LYU, R. Michael. (2024). *Proceedings of the ACM on Software Engineering, 1* (FSE), 137-160. https://doi.org/10.1145/3643733 (Published)

Go static: Contextualized logging statement generation, by LI, Yichen; HUO, Yintong; ZHONG, Renyi; JIANG, Zhihan; LIU, Jinyang; HUANG, Junjie; GU, Jiazhen; HE, Pinjia; LYU, R. Michael. (2024). *Proceedings of the ACM on Software Engineering, 1* 609-630. https://doi.org/10.1145/3643754 (Published)

Conference Proceedings

ConfLogger: Enhance systems' configuration diagnosability through configuration logging, by SHAN, Shiwen; HUO, Yintong; SU, Yuxin; WANG, Zhining; LI, Dan; ZHENG, Zibin. (2026.0). *Proceedings of the 48th IEEE/ACM International Conference on Software Engineering, Rio de Janeiro, Brazil, 2026 April 12-18,* (pp. 1-13) Rio de Janeiro, Brazil: (Accepted)

Interaction2Code: Benchmarking MLLM-based interactive webpage code generation from interactive prototyping, by XIAO, Jingyu; WAN, Yuxuan; HUO, Yintong; WANG, Zixin; XU, Xinyi; WANG, Wenxuan; XU, Zhiyao; WANG, Yuhang; LYU, Michael R.. (2025.0). *Proceedings of the 40th IEEE/ACM International Conference on Automated Software Engineering, ASE 2025, Seoul, November 16-20,* (pp. 1-21) Seoul, Korea: (Forthcoming)

Envisioning future interactive web development: Editing webpage with natural language, by DANG, Truong Hai; XIAO, Jingyu; HUO, Yintong. (2025.0). *Proceedings of the 2nd ACM/IEEE International Conference on AI-powered Software, Seoul, AIware 2025, November 19-20,* (pp. 1-6) Seoul, Korea: (Forthcoming)

Exploring autonomous agents: A closer look at why they fail when completing tasks, by LU, Ruofan; LI, Yichen; HUO, Yintong. (2025.0). *Proceedings of the 40th IEEE/ACM International Conference on Automated Software Engineering, ASE 2025, Seoul, November 16-20,* (pp. 1-5) Seoul, Korea: (Forthcoming)

Enhancing LLM-based coding tools through native integration of IDE-derived static context, by LI, Yichen; PENG, Yun; HUO, Yintong; LYU, R. Michael. (2024.0). *LLM4Code '24: Proceedings of the 1st International Workshop on Large Language Models for Code, Lisbon, Portugal, April 20* , (pp. 70-74) New York : ACM. https://doi.org/10.1145/3643795.3648392 (Published)

DivLog: Log parsing with prompt enhanced in-context learning, by XU, Junjielong; YANG, Ruichun; HUO, Yintong; ZHANG, Chengyu; HE, Pinjia. (2024.0). *ICSE '24: Proceedings of the IEEE/ACM 46th International Conference on Software Engineering, Lisbon, Portugal, 2024 April 14-20,* (pp. 1-12) New York : ACM. https://doi.org/10.1145/3597503.3639155 (Published)

A large-scale evaluation for log parsing techniques: How far are we?, by JIANG, Zhihan; LIU, Jinyang; HUANG, Junjie; LI, Yichen; HUO, Yintong; GU, Jiazhen; CHEN, Zhuangbin; ZHU, Jieming; LYU, R. Michael. (2024.0). *ISSTA 2024: Proceedings of the 33rd ACM SIGSOFT International Symposium on Software Testing and Analysis, Vienna Austria, September 16-20,* (pp. 223-234) New York : ACM. https://doi.org/10.1145/3650212.3652123 (Published)

KPIRoot: Efficient monitoring metric-based root cause localization in large-scale cloud systems, by GU, Wenwei; SUN, Xinying; LIU, Jinyang; HUO, Yintong; CHEN, Zhuangbin; ZHANG, Jianping; GU, Jiazhen; YANG, Yongqiang; LYU, Michael R.. (2024.0). *Proceedings of the 2024 IEEE 35th International Symposium on Software Reliability Engineering (ISSRE), Tsukuba, Japan, October 28-31,* (pp. 403-414) Pistacataway: IEEE. (Published)

Demystifying and extracting fault-indicating information from logs for failure diagnosis, by HUANG, Junjie; JIANG, Zhihan; LIU, Jinyang; HUO, Yintong; GU, Jiazhen; CHEN, Zhuangbin; FENG, Cong; DONG, Hui; YANG, Zengyin; LYU, Michael R.. (2024.0). *Proceedings of the 2024 IEEE 35th International Symposium on Software Reliability Engineering (ISSRE), Tsukuba, Japan, October 28-31,* (pp. 1-12) Pistacataway: IEEE. https://doi.org/10.1109/ISSRE62328.2024.00055 (Published)

Face it yourselves: An LLM-based two-stage strategy to localize configuration errors via logs, by SHI, Shiwen; HUO, Yintong; SU, Yuxin; LI, Yichen; LI, Dan; ZHENG, Zibin. (2024.0). *ISSTA 2024: Proceedings of the 33rd ACM SIGSOFT International Symposium on Software Testing and Analysis, Vienna, Austria September 16-20,* (pp. -13) New York : ACM. https://doi.org/10.1145/3650212.3652106 (Published)

Domain knowledge matters: Improving prompts with fix templates for repairing Python type errors, by PENG, Yun; GAO, Shuzheng; GAO, Cuiyun; HUO, Yintong; LYU, Michael. (2024.0). *Proceedings of the 46th IEEE/ACM International Conference on Software Engineering, Lisbon, Portugal, 2024 April 14-20,* (pp. 1-13) New York : ACM. https://doi.org/10.1145/3597503.3608132 (Published)

AutoLog: A log sequence synthesis framework for anomaly detection, by HUO, Yintong; LI, Yichen; SU,

Yuxin; HE, Pinjia; XIE, Zifan; LYU, R. Michael. (2023.0). *ASE '23: Proceedings of the 38th IEEE/ACM International Conference on Automated Software Engineering, Echternach, Luxembourg, November 11-15,* (pp. 497-509) New York : ACM. https://doi.org/10.1109/ASE56229.2023.00133 (Published)

EvLog: Identifying anomalous logs over software evolution, by HUO, Yintong; LEE, Cheryl; SU, Yuxin; SHAN, Shiwen; LIU, Jinyang; LYU, Michael. (2023.0). *Proceedings of the 2023 IEEE 34th International Symposium on Software Reliability Engineering (ISSRE), Florence, Italy, October 9-12,* (pp. 391-402) Los Alamitos, CA: IEEE Computer Society. https://doi.org/10.1109/ISSRE59848.2023.00018 (Published)

SemParser: A semantic parser for log analytics, by HUO, Yintong; SU, Yuxin; LEE, Cheryl; LYU, R. Michael. (2023.0). *ICSE '23: Proceedings of the 45th International Conference on Software Engineering, Melbourne, Australia, May 14-20*
, (pp. 881-893) New York : ACM. https://doi.org/10.1109/ICSE48619.2023.00082 (Published)

LogVM: Variable semantics miner for log messages, by HUO, Yintong; SU, Yuxin; LYU, Michael. (2022.0). *Proceedings of the 2022 IEEE International Symposium on Software Reliability Engineering Workshops (ISSREW), Charlotte, NC, USA, October 31 - November 3,* (pp. 124-125) Los Alamitos, CA: IEEE Computer Society. https://doi.org/10.1109/ISSREW55968.2022.00053 (Published)

ARCLIN: Automated API mention resolution for unformatted texts, by HUO, Yintong; SU, Yuxin; ZHANG, Hongming; LYU, R. Michael. (2022.0). *ICSE '22: Proceedings of the 44th International Conference on Software Engineering, Pittsburgh, Pennsylvania, May 21-29*
, (pp. 138-149) New York : ACM. https://doi.org/10.1145/3510003.3510158 (Published)

Research Grants

Singapore Management University

Systematic Evaluation of the Trustworthiness of Agentic AI Systems, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): JIANG Lingxiao , Co-PI (Project Level): HUO Yintong, Christoph TREUDE, 2025, S$150,000

Multimodal code intelligence on GUI understanding and generation, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): HUO Yintong, 2025, S$119,600

TEACHING

Courses Taught

Singapore Management University

Undergraduate Programmes :

Data Structures and Algorithms

Postgraduate Research Programmes :

Empirical Research Project 1