

Qiyuan Zhao

BIO

I am a Ph.D. student from VERSE lab at National University of Singapore advised by Prof. Ilya Sergey. Previously I earned my bachelor's degree in computer science from Shanghai Jiao Tong University, where I worked with Prof. Qinxiang Cao. I have worked in the general field of programming languages, formal methods and software engineering before I started my Ph.D. study. That said, I decide to focus my research in my Ph.D. on the theory and techniques about programming languages, and also formal verification (using automated/interactive theorem provers).

EDUCATION

National University of Singapore (NUS)

Ph.D. student in computer science

Singapore
Jan 2023 – Now

- Advisor: Assoc. Prof. Ilya Sergey

Shanghai Jiao Tong University (SJTU)

Bachelor in computer science

Shanghai, China
Sep 2018 – Jun 2022

- Advisor: Assoc. Prof. Qinxiang Cao
- Bachelor's thesis: *Formalizing Denotational Semantics of Lambda Calculus in Coq*

OTHER EXPERIENCE

Microsoft Research Asia (MSRA)

Research Intern

Beijing, China (mostly working remotely)
Jul 2021 – Dec 2021

- Mentor: Dr. Chuan Luo (now Associate Professor at Beihang University)

CONFERENCE PAPERS

Rooting for Efficiency: Mechanised Reasoning about Array-Based Trees in Separation Logic

Qiyuan Zhao, George Pîrlea, Zhendong Ang, Umang Mathur, Ilya Sergey

CPP 2024 (co-located with POPL 2024) **Distinguished Paper Award**

- Topic: formal methods → formal verification

CActor: A Novel and Effective Local Search Algorithm for Optimizing Pairwise Covering Arrays

Qiyuan Zhao, Chuan Luo, Shaowei Cai, Wei Wu, Jinkun Lin, Hongyu Zhang, Chunming Hu

ESEC/FSE 2023

- Topic: software testing → combinatorial testing → pairwise testing

Generating Pairwise Covering Arrays for Highly Configurable Software Systems

Chuan Luo, Jianping Song, Qiyuan Zhao, Yibei Li, Shaowei Cai, Chunming Hu

SPLC 2023

- Topic: software testing → combinatorial testing → pairwise testing

SamplingCA: Effective and Efficient Sampling-based Pairwise Testing for Highly Configurable Software Systems

Chuan Luo, Qiyuan Zhao, Shaowei Cai, Hongyu Zhang, Chunming Hu

ESEC/FSE 2022

- Topic: software testing → combinatorial testing → pairwise testing

SCHOLARSHIPS AND AWARDS

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| NUS Research Scholarship | <i>2023 – Now</i> |
| Gold Award (14th place) in the 45th ICPC Asia Shenyang Regional Programming Contest | <i>Jul 2021</i> |
| Silver Award in the 45th ICPC Asia Shanghai Regional Programming Contest | <i>Dec 2020</i> |
| Zhiyuan Honor Scholarship | <i>2019, 2020, 2021</i> |
| College Freshman Scholarship | <i>2018</i> |

SKILLS

Programming Languages: Skilled in C/C++, Python, OCaml, Coq.

Languages: Chinese (native speaker), English (fluent)