Shengyi Wang

Research Area: Programming Languages, Formal Methods, Formal Proof, Program Verification
shengyiw@princeton.edu • +1(609)251-1191

EDUCATION

National University of Singapore, Singapore
- Ph.D. in Computer Science — 2014 – 2020

Peking University, Beijing, China
- M.S. in Applied Mathematics — 2007 – 2010
- B.S. in Mathematics — 2003 – 2007

EXPERIENCE

Princeton University, Princeton, New Jersey, USA
- Associate Research Scholar, Department of Computer Science — Apr 2023 – Present
- Postdoctoral Research Associate, Department of Computer Science — Apr 2020 – Apr 2023

Princeton University, Princeton, New Jersey, USA
- Research Intern, Department of Computer Science — Apr 2018 – Jul 2018
  - Project: Formal verification of a garbage collector of the CertiCoq compiler
  - Supervisors: Prof. Andrew Appel

National University of Singapore, Singapore
- Research Assistant, School of Computing — Mar 2013 – Dec 2013
  - Project: HIP/SLEEK, an automatic verification tool.
  - Supervisors: Prof. Wei-Ngan Chin

Tencent Technology Co., Ltd., Beijing, China
- Software Engineer, Social Network Group — Jul 2010 – Mar 2013
  - Advertise management system and audit system
  - Server-side programming in Java

IBM Research – China, Beijing, China
- Research Intern, Group of Information Visualization — Mar 2007 – Dec 2007
  - Patent CN101593070B: Method and equipment for visualizing a great deal of information

PUBLICATIONS

CONFERENCES

[1] Duc-Than Nguyen, Lennart Beringer, William Mansky and Shengyi Wang. Compositional Verification of Concurrent C Programs with Search Structure Templates. In *CPP 2024: Certified Programs and Proofs*, 2024.

[2] Qinshi Wang, Mengying Pan, Shengyi Wang, Ryan Doenges, Lennart Beringer and Andrew W. Appel. Foundational Verification of Stateful P4 Packet Processing. In *ITP 2023: Fourteenth Conference on Interactive Theorem Proving*, 2023.

[3] Roshan Sharma, Shengyi Wang, Alexander Oey, Anastasiia Evdokimova, Lennart Beringer and William Mansky. Proving Logical Atomicity using Lock Invariants. In *Workshop on Advances in Separation Logics*, 2022.

[4] Shweta Shinde, Shengyi Wang, Pinghai Yuan, Aquinas Hobor, Abhik Roychoudhury, and Prateek Saxena. BesFS: Mechanized Proof of an Iago-Safe Filesystem for Enclaves. In *USENIX Security Symposium*, 2020.

[5] Shengyi Wang, Qinxiang Cao, Anshuman Mohan, and Aquinas Hobor. Certifying Graph-Manipulating C Programs via Localizations within Data Structures. In *OOPSLA: Conference on Object-Oriented Programming Systems, Languages, and Applications*, 2019.

[6] Asankhaya Sharma, Shengyi Wang, Andreea Costea, Aquinas Hobor, and Wei-Ngan Chin. Certified Reasoning with Infinity. In *FM 2015: Formal Methods*, pages 496–513, Cham, 2015. Springer International Publishing. ISBN 978-3-319-19249-9.

[7] Shengyi Wang, Zongyan Qiu, Shengchao Qin, and Wei-Ngan Chin. Stack Bound Inference for Abstract Java Bytecode. In *4th IEEE International Symposium on Theoretical Aspects of Software Engineering*, 2010.

PROJECTS

- **VerifiableP4**, a Coq framework for verification of P4 programs.
- **CertiGraph**, a Coq library for verification of graph-manipulating programs.

[*CV compiled on 2023-12-21*]