Xuanrui Qi

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Education

Oct 2019 — Aug 2021 (expected)	**M.S. in Mathematical Sciences**, *Graduate School of Mathematics, Nagoya University*, Nagoya, Aichi, Japan. **Advisor**: Jacques Garrigue
May 2019	**M.S. in Computer Science**, *Tufts University*, Medford, MA, USA. **Advisor**: Samuel Z. Guyer **Unofficial mentors**: Cyrus Omar (University of Michigan), Jacques Garrigue (Nagoya University) **GPA**: 3.77/4.0
May 2018	**B.S. in Computer Science, *magna cum laude*, with honors in thesis**, *Tufts University*, Medford, MA, USA. **Second major**: international relations. **Minor**: mathematics. **Advisor**: Samuel Z. Guyer **GPA**: 3.72/4.0
June 2014	**High School Diploma**, *Shenzhen Middle School*, Shenzhen, Guangdong, China.

Research Interests

Type theory, mechanized formal proofs & proof assistants, type systems for programming languages, category theory, constructivism in mathematics.

Research Positions

June 2018 – August 2018	**Research Visitor**, *Graduate School of Mathematics, Nagoya University*, Nagoya, Japan. Hosted by and worked with Professor Jacques Garrigue.
March 2017 – May 2018	**Research Assistant**, *Department of Computer Science, Tufts University*, Medford, MA, USA. Research assistant under Professor Sam Guyer, working in the RedLine Systems Research Group.

Other Positions

2019 –	**Contractor**, *SiFive*, San Mateo, CA, USA. Continuing my work with Murali Vijayaraghavan on veriyfing RISC-V chips in Coq.
2019	**Intern**, *SiFive*, San Mateo, CA, USA. Interning at SiFive, working with Murali Vijayaraghavan on verifying RISC-V processors in Coq.
2016	**Intern**, *Institute of Automation, Chinese Academy of Sciences*, Beijing, China. Interned at the State Key Laboratory of Control and Management of Complex Systems, working on computer vision.

Research Publications

Research Papers

1. Reynald Affeldt, Jacques Garrigue, **Xuanrui Qi**, and Kazunari Tanaka. Proving Tree Algorithms for Succinct Data Structures. The 10th International Conference on Interactive Theorem Proving (ITP 2019).

Theses

1. **Xuanrui (Ray) Qi**. Elephant Tracks II: Practical, Extensible Memory Tracing. Senior Honors Thesis, Tufts University, 2018. Thesis committee: Sam Guyer (chair), Kathleen Fisher.

Refereed Talks & Presentations

1. Reynald Affeldt, Jacques Garrigue, **Xuanrui Qi**, and Kazunari Tanaka. Experience Report: Type-Driven Development of Certified Tree Algorithms in Coq. The Coq Workshop 2019.
2. **Xuanrui (Ray) Qi**. From Tactics to Structure Editors for Proofs. Off the Beaten Track 2019 (OBT 2019).
3. **Xuanrui (Ray) Qi**. A Practical and Extensible Framework for Garbage Collection Tracing. SPLASH 2018 Student Research Competition.

Teaching Experience

Teaching Assistant

○ Calculus I for the G30 Program, Fall 2019, Nagoya University
○ Concurrent Programming (COMP 50CP), Fall 2017 & 2018, Tufts University

Non-Scientific Courses

○ Peer instructor (instructor of record), Spring 2018, Experimental College, Tufts University

Other Academic Activities

○ Student Volunteer, POPL 2018
○ Programming Language Mentoring Workshop scholarship awardee, ICFP 2017
○ Participant, Oregon Programming Languages Summer School 2017