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Education

Ph.D. student, Software Engineering, Shanghai Jiao Tong University, Shanghai, Sep 2017 - Current.

B.S. Software Engineering, Shanghai Jiao Tong University, Shanghai, Sep 2013 - Jun 2017.

Research Interests

System Verification

Reseach Experience

Member of Institude of Parallel and Distributed Systems (IPADS), SJTU

Systems related researches, Supervised by Prof. Haibo Chen.

1. Apr 2020 - Current, Verifying liveness properties for concurrent file systems

Ensuring liveness in file systems is significant (e.g., no deadlock and no system hang). But liveness usually relies on a fair scheduling assumption that introduce complicated interdependencies among threads. Existing concurrent system verification falls short in liveness, and we are trying to verify liveness for file systems.

2. Aug 2019 - Current, Verifying crash-safety for concurrent file systems

Make concurrent file systems crash-safe is important but challenging cause programmers must consider interleaving of threads as well as the possibility of a crash at any time. We extend our framework used in AtomFS project to support crash-safety reasoning.

3. Jan 2018 - July 2019, Project AtomFS: Concurrent file system verification

This project explores how to verify concurrent file systems. They are pervasive but hard to correctly implement due to nondeterministic interleaving. We identify the *path interdependencies* phenomenon (found in all mainstream file systems), which makes verification challenging, and propose a verification technique called *helpers* to overcome the challenges. We successfully build AtomFS, which is proven to be functional correct and linearizable.

Publications

(**SOSP 2019**) **Mo Zou**, Haoran Ding, Dong Du, Ming Fu, Ronghui Gu and Haibo Chen. Using Concurrent Relational Logic with Helpers for Verifying the AtomFS File System. In ACM SIGOPS 27th Symposium on Operating Systems Principles (SOSP '19), October 27–30, 2019, Huntsville, ON, Canada. ACM, New York, NY, USA

Scholarship and Honors

Nov, 2019, Yang Jiachi Scholarship in Shanghai Jiao Tong University

Oct 2016, National Encouragement Scholarship

Oct, 2016, Tung OOCL Scholarship in Shanghai Jiao Tong University

Oct, 2016, The Second Prize Scholarship in Shanghai Jiao Tong University

Nov, 2015, The first prize of the 8th Intel Cup National Colleague Software Innovation Contest

Oct, 2015, Xin Dong Scholarship in Shanghai Jiao Tong University

Oct, 2015, The Second Prize Scholarship in Shanghai Jiao Tong University

Apr, 2015, Honorable Mention of Mathematical Contest In Modeling

Dec 2014, National Encouragement Scholarship

Dec, 2014, The Second Prize Scholarship in Shanghai Jiao Tong University