Yanning Chen

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Education

Shanghai Jiao Tong University (SJTU)   Sept. 2019 - June. 2024 (expected)

- Bachelor of Computer Science
- GPA 3.70 / 4.3, Ranking 39 / 108 (first 3 years)
- Research Interests: Programming Language, Formal Verification, Program Analysis
- Programming Languages: Rust, Coq, Python, Java, C/C++ and Golang

Projects

Meta Programming Theories in Functional Languages   Apr. 2020 - Mar. 2021

Research Participation Program   Research on formal semantics of meta programming in functional languages.

- Formalized the semantics of *lambda calculus with constructors* in *Coq*.
- Proved the *simulation* relation between meta programs and object programs.
- *Semi-automatic synthesis* of meta programs and *proof construction* of simulation from program to meta-program by *Ltac*.

SimPL Interpreter   May. 2022 - June. 2022

Course Project   An interpreter for an ML-like language, Java   [Code]

- Defined the operational semantics and typing rules of a simplified dialect of *ML*.
- Implemented lazy/eager evaluation, *HM* type inference using *algorithm W* and copy garbage collection.

Deductive Prover for a Subset of C   June. 2022 - Oct. 2022

Mentee   Open Source Promotion Plan by ISCAS, Rust   [Code]

- Implemented verification functionalities like *require*, *ensure*, and *invariant* on a subset of C.
- Automated program verification using *SMT* solvers.

RBAC support for TiKV PD   Sept. 2020 - Dec. 2020

Mentee   A Linux Foundation mentorship program, Golang   [Code]

- Proposed a design to add *role based access control* for the placement driver for a distributed KV database.
- Implemented an initial version of *RBAC* support for *TiKV PD* cluster.

Experience

Shanghai Jiao Tong University Linux User Group   July. 2020 - Present

Leader   A joyful techie user group in SJTU. Maintains a mirror service and a LaTeX template.   [Website]

- Responsible for maintaining one of the biggest mirror service in China.
- Developed a tool in Rust to mirror *rsync* repositories to *S3* storage with atomic updates and delta transfer.

SJTU Plus   Sept. 2020 - Present

Maintainer   A student organization in SJTU that aims at providing online utilities for SJTUers to make their life easier.   [Website (zh-CN)]