Cheng Ding

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Education

University of Science and Technology of China (USTC), Hefei, Anhui, China   Sep 2020- Jul 2024 (expected)
Bachelor of Computer Science, School of the Gifted Young
GPA: 3.76/4.30 (88.6/100)
Core courses: Operating Systems (Honors) (99/100, top1), Computer Programming (96/100), Algebraic Structure (96/100), Introduction to Computing Systems (94/100), Foundations of Algorithms (93/100), Parallel Computing (92/100), Computer Organization and Design (Honors) (90/100), Principles and Techniques of Compiler (Honors) (89/100)

Research Interests

System Reliability, Software Engineering, Distributed Systems, Formal Methods, Programming Languages

Research Experience

Research Assistant, University of Illinois at Urbana-Champaign (UIUC)   Jul 2023-present
GoMOP:A Runtime Verification Tool for Go Programs
Advisors: Professor **Tianyin Xu,** *UIUC, Professor* **Owolabi Legunsen,** *Cornell*
- The ultimate goal is to perform runtime verification of infrastructures of cloud systems like Kubernetes
- So far, I am designing and implementing a practical Runtime Verification tool for Go. GoMOP can:
    - report violations before it actually happens.
    - monitor multiple specifications simultaneously.
    - support multiple specification languages (LTL FSM, ERE, etc).
- Implemented 5 parametric monitoring algorithms.
    - achieve online monitoring which can report the violation promptly.
    - reduce runtime overhead using the enable sets optimization.
- Exploring more specifications based on common patterns of Go program bugs to verify widely-used Go libraries
- Planning to submit a paper on GoMOP to a top Software Engineering conference

Project Experience

Distributed Dataset Platform for sharing Images and Videos   Mar 2022-Jul 2022
Coursework of Operating Systems(Honors) (https://github.com/OSH-2022/x-WowKiddy)
- Constructed the distributed file system based on a distributed system framework: JuiceFS.
- Allowed previewing videos on the web page by converting them into CSS Sprites(combinations of multiple frames)
- Applied a graph database: Neo4j to connect files based on their meta information and tags.
- Utilized system monitoring frameworks: Prometheus and Grafana to build a performance monitor of the system.

Teaching Experiences

- Teaching Assistant of *Computer Programming* @USTC
- Teaching Assistant of *Operating Systems(Honors)* @USTC

Skills

- Computer Languages and Skills: C/C++, Go, Java, Python, x86 Assembly, GDB, LATEX, Docker, MySQL, Git
- Languages: English(TOEFL 104, Speaking 23), Mandarin(native)