

WEIWEN CHEN

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EDUCATION

Fudan University

Bachelor of Physics

Relevant Courses: Data Structure, Operating System, Computer Network, Introduction to Database.

Aug 2017 - Now

WORK AND RESEARCH EXPERIENCE

Department of Computer Science, Fudan University

Member of Data Analysis and Security Lab (Supervisor: Prof. Kai Zhang)

Shanghai, China

Jun 2021 - Now

- Developing multi tenant functionality on CMU's high-performance Key-Value database mica, with a doctoral student.
 - Writing sampling and logging code.
 - Engaging in development, debugging and performance optimization.
- Implemented a request sampling strategy to estimate load effectively in mica, inspired by Gprof.
 - Utilized fast timing (dozen of CPU cycles) with Time Stamp Register.
 - Refactored the core module (processing) of mica, made it easier to read and develop.
 - Ensured performance loss is little during refactoring, by running and recording benchmark after each commit.
 - Cooperated with my collaborator with private github repository, manage progress by issues, PRs and projects.
- Upgraded DPDK's incompatible API on mica's 30K line code base, by introducing a test framework.
 - Read the whole code base, had holistic understanding of the architecture of mica.
 - Identified modules needed to be upgraded, by drawing a dependency map to clarify modules' relationship.
 - Integrated an tiny test framework greatest.h into mica, finished upgrading in a week.

PingCAP Inc.

Intern of Quality Assurance Engineer (Mentor: Shaowen Yin)

Projects: github.com/PingCAP-QE/metrics-checker github.com/cosven/tidb-testing/tipocket-ctl

Shanghai, China

Nov 2020 - Apr 2021

- Built a metrics checker for TiDB's automated test. Still maintained and used in pipeline after I left.
 - Led the design and implementation with golang and Prometheus API.
 - Wrote tests and passed code review, then integrated it into existed argo workflow pipeline and CI/CD tools.
 - (It has been transferred to a private repository of PingCAP, so the project link is a snapshot.)
- Simplified debugging TiDB inside k8s container by developing a tool along with my mentor.
 - Collected requirements from developers and got involved in the overall design.
 - Prototyped in-container part with python and shell script, maintained the script generator with my mentor.
 - Engaged in code review, maintenance and new feature request.
- Accomplished end-to-end test with developers in the release of a major version on time.

Department of Optical Science and Engineering, Fudan University

Member of Computational Physics Lab (Supervisor: Prof. Hao Zhang)

Publication: www.nature.com/articles/s41699-020-0147-x

Shanghai, China

Jun 2018 - Nov 2019

- Coded for data processing of a paper on computational material research in the name of third author.
 - Build automatic data processing pipeline for material calculation program VASP, and visualized data with python.
- Trained all colleagues workflow of git and set up a private Gitlab. Still invited to give lectures about CS.
 - Set up a private Gitlab on lab's server with Docker, write documentations about how to use it.
 - Gave lectures about git and basic linux tools.
- Created some crawlers and scripts to aggregate data from several researchers' website. Still in use.
 - Wrote crawlers in scrapy to access public data files from some researchers' personal website.

- Wrote a bunch of python scripts to interact with multiple material databases' API.

School of Microelectronics, Fudan University

Shanghai, China

*Teaching Assistant of SOC lab (Supervisor: Fei Ye, Camel Microelectronics)**Mar 2018 - Nov 2018*

- Implemented CAN bus protocol on Camel's M2 chip, which has operating system, only a C compiler.
 - Made it from bottom up by reading documentations, since there is no mature tutorial on this topic.
 - Dealt with low level details like memory-mapped IO, which required understanding of abstractions in programming.
 - Helped my successors to integrate my CAN bus code into their projects in 2021 summer.
- Organized teaching material into a textbook and demonstrated them by videos, as training material for newcomers.
 - Delivered lectures about all 10 labs in the textbook, as TA of "SOC: System On Chip" summer course.
 - Guided experiments, assigned and graded homework, held Q & A sessions.
 - Gave personal consultancy to my students who wanted to push their projects further, even after the semester is over.

Department of Physics, Fudan University*Sept 2017 - Now*

- Built an atmosphere simulation and visualization, in python, at Statistical Physics lesson.
- Wrote an fuzzing tool, with rust, on Computer Architecture lesson.
- Implemented a subset of FTP protocol, in python, as Project of Computer Network lesson.

EXTRACURRICULUM EXPERIENCE**PC Service of Fudan University***Mar 2017 - June 2019*

- Volunteered giving consultancy on python and system management.

Physics Experiment Teaching Center*July 2019*

- Automated oil and water droplet classification under microscope with machine learning.

SKILLS**Programming Languages (in proficiency order):** python, cpp, golang, shell, rust, javascript and lisp.**Knowledge:** Database, operating system, algorithm, data structure.**Language:** Chinese (Native), English (TOEFL 105).**Extracurriculars:** Vim, Emacs, VSCode, Gnome Desktop, guitar, bass and bypassing GFW.