WEIWEN CHEN

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EDUCATION

Fudan University *Aug 2017 - Now*
Bachelor of Physics
Relevant Courses: Data Structure, Operating System, Computer Network, Introduction to Database.

WORK AND RESEARCH EXPERIENCE

Department of Computer Science, Fudan University Shanghai, China
Member of Data Analysis and Security Lab (Supervisor: Prof. Kai Zhang) *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. Shanghai, China
Intern of Quality Assurance Engineer (Mentor: Shaowen Yin) *Nov 2020 - Apr 2021*
Projects: github.com/PingCAP-QE/metrics-checker github.com/cosven/tidb-testing/tipocket-ctl

- 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.
- Return offer.

Department of Optical Science and Engineering, Fudan University Shanghai, China
Member of Computational Physics Lab (Supervisor: Prof. Hao Zhang) *Jun 2018 - Nov 2019*
Publication: www.nature.com/articles/s41699-020-0147-x

- 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.

Computer Science Club of Fudan University *github.com/ofey404/slack-backend-sh* — *Nov 2020 - Now*
· Launched a bot to backup all messages on club's slack based bulletin board.

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.