Yiyang **Wu**

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A professionally trained student looking for an internship on system development starting from now

Education

Bachelor of Software Engineering
Shanghai JiaoTong University, China

2021 - 2025
Shanghai

- Course: Compilers(C++) A+
- Course: Data Structure(C++) A+
- Course: Machine Learning A+
- Course: Computer System Engineering(C++) A+
- Course: Intro to Computer Systems I/II/III A+
- Course: Intro to Software Engineering A+
- Course: Intro to Web Application Development A+
- Course: Pratical Web Application Design and Development A+
- Course: Advanced Data Structure(C++) A
- Course: Application Infrastrcture A

Research Experience

System Engineering Researcher
Institute of Parallel and Distributed Systems

2023-present
Shanghai

- Use Rust and LLVM toolchain to build a high-performance type-I hardware hypervisor to statically partition the system resource to run different operating systems on embedded aarch64 systems for different purpose.
- Implement different hardware passthrough support including GIC, Memory, I/O, DMAPassthrough for performance improvement.
- Introduce hardware-level isolation scheme to offer fault-tolerance control across different partitions.

Projects

NEMU
NJU

2022 Summer
github: ics-pa-gitbook/ics2021

- Use C and Assembly Language to build a native riscv64 architecture and simulator with interrupt system and virtual memory for x86 platform.
- Use C to build a little libc and device runtime for simulated riscv64 programs.
- Port a multitasking operating system and build a small POSIX-compliant shell to power the entire system.
- Use GNU Build system and organize over 100000+ LOCS with different compile-time options by configuring KConfig and Makefile.

Tiger Compiler
SJTU

2023 Fall
Course Project

- Use C++ to build a native x86-64 unoptimized garbage-collected working compiler for course-proposed tiger language.
- Learn multi-stage multi-pass schemes of a compiler including semantic analysis, syntatic analysis, intermediate representation and register allocation.
- Learn Multiple Garbage Collection Algorithm and integrate the generational forwarding GC into the language runtime.

chFS
SJTU

2023 Fall
Course Project

- Use Modern C++ to build a multithreaded GFS-like distributed inode-based filesystem including fault-tolerance, version control support and commitlog implementation.
- Learn Mutliple concurrency control schema including two-phase commit, two-phase locking, optimistic concurrency control and so on.
- Integrate the well-known Raft Consensus Algorithm into the distributed filesystem and provide the availability and parition-tolerance guarantee.

MiniLSM
SJTU

2023 Spring
github: ToolmanP/BabyLSM

- Use Modern C++ to build a single-threaded KV engine by constructing and optimizing a LSM data structure.
- Use Modern CMake to organize the code structure and optimize the project's building process.

Cealgull
SJTU

2023 Summer - 2023 Fall
github: Cealgull/cealgull.app

- Master Safe/Unsafe Golang to build a containerized scalable and portable web3 application backend.
- Use OpenSSL to build a proof-of-authority based trading and analysis system.
- Use Cryptography Schemes to build an untracable trading protocol to protect users' privacy.
- Use Hyperledger/IPFS to build a decentralized/distributed ledger and storage system to support web3 usecase.
- Use Github CI/CD to leverage the project's progress monitoring and build a corresponding testing framework.

- Serve as a dev-team leader and devise the project's phased plan and serveral programming conventions

ChatSJTU *2023 Summer - Present*
SJTU *Network & Information Center*

- Use Django to build a real-time Chat API and session management and sharing backend.
- Completely walk through the OpenAI docs to forward students' requests and proxy the API's responses.
- Tweak the LLAMA-2 model to support docs' knowledge extraction and paraphrase the output for frontend.

Skills

Languages	English | Chinese | Shanghaiese
Tech Stack	Modern C++ | Python (Pytorch/Web) | Rust | Golang | Cloud Native
Personal Interests	Cooking | Reading | Programming