ChengXiang Qi

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Education

TianJin University September 2019 – June 2023(Expected)

Computer Science and Technology TianJin, China

Selected Open-source Projects

xv6-rust 03/2021 - 08/2021

MIT xv6-riscv implemented by Rust Ko-oK/xv6-rust(☆80)

- A Unix-like operating system implemented pure rust.
- Optimize memory module using Buddy Sytem.
- Redesign Spinlock/Sleeplock as smart pointer.
- Optimize file system, making it support Rust features.

rCore-fat 07/2021 - 08/2021

A operaing system based rCore-tutorial-v3 with fat32 file system rCore-fat

- Design fat32 file system for rCore-Tutorial-v3, it is a alternative topic of rCore OS community in Summer OSPP 2021.

Trivial-TCP 08/2021 - 09/2021

A TCP/IP stack implemented in pure C Trivial-TCP

- A TCP/IP stack which use UDP to simulate low level network environment. This project is the final project of Computer Netword Coursera.
- Implement three-way handshake, Go-Back-N, sliding window and so on.
- Implement a Linux-like timer.

mini-game-os 07/2022 - Now

A bare metal game running in raspberry pi 4 written in Rust raspberrypi-embedded/mini-game-os

- This is my hobby project and also my first try to explore embedded system in Rust
- It is designed for playing simple games such as snake game, flappy bird and son
- It can run QEMU and raspberry pi 4B.

Other Projects

- **xv6-riscv-solution**(☆20): My solution and notes for MIT 6.S081 OS Course labs. [xv6-riscv-solution]
- **NEMU-x86**(☆10): NEMU is a simple but complete full-system emulator designed for teaching purpose. I finished it during Computer Organization and System Course. [NEMU-x86]
- **NSCSCC-2022-TJU/ChiselMIPS**: ChiselMIPS is a five-stage CPU with instruction cache, data cache and TLB written in Chisel for NSCSCC 2022. [NSCSCC-2022-TJU/ChiselMIPS]
- **SimpleMIPS**(☆5): SimpleMIPS is a classical five-stage pipelined CPU written in verilog that supports 57 MIPS instructions. [SimpleMIPS]
- **SimpleDB**: My solution for CMU 15445/645 lab. [SimpleDB]

Selected Awards

- NSCSCC Team Competition Third Prize in 2022
- OSCOMP Team Competition Thrid Prize in 2021
- The Best Quality Award in Summer OSPP 2021

Experiences

Summer OSPP 2021 07/2021 - 10/2021

- I join rcore-os commuinity and design fat32 file system for rCore-Tutorial-v3.

Teaching Assignment 09/2021 - 11/2021

- Pratice of ICS in 2021, I help students complete NEMU(a x86-32 software emulator).

TWT Studio 09/2019 - 01/2021

- Maintain Part Management System
- Develop Intramural Forum System in WeiPeiYang
- Develop AT(a office automation system)

Skills

Programming Languages: Rust, C/C++, Go, Python, HTML/CSS/JavaScript, PHP
Frameworks: Vue3, Gin, Laravel
Tools: VSCode, gdb, GNU make, CMake, QEMU, Docker
Tech Skills: OS Kernel, Low level software development, Backend development and Frontend development

Others

- Self taught CMU 15-445, MIT 6.S081 and other public courses and finish lab assignments
- Interested OS, Distributed System, Embedded System
- Persoanl open source projects have earned more than 200 stars.