

Zhekai Zhang

ACM Honored Class
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| INTERESTS | Architecture of distributed computing and operating system Design and Implementation of large-scale systems Compilation and Optimization of computer programs |
| SKILLS | Strong programming skills C++ (including basic template metaprogramming and modern C++), Python , Verilog , Golang Familiar with Linux Operations |
| EDUCATION | Junior student at ACM Honored Class, Shanghai Jiao Tong University GPA 3.58 (Rank 12/25) Especially good at programming & design related courses: MS108 Computer Systems (I) (A, rank 2) MS208 Curriculum Design of Computer Systems (A+, full mark, rank 1) MS106 Principle and Practice of Computer Algorithms (A+) CS122 Program Design (A+, rank 1) |
| PROJECTS | 2017/12 - now: Operating System Kernel <i>Course Project of MS110 Computer Systems (II)</i> <i>Leader of Group Project</i> https://github.com/sxyzhangzk/mOS/ An OS kernel on x86-64 platform written in C and C++ Includes UEFI bootloader, memory allocator, process scheduler and basic video & keyboard driver to support a basic shell (Working in Progress) 2017/06: MIPS CPU <i>Course Project of MS108 Computer Systems (I)</i> <i>Personal Project</i> https://github.com/sxyzhangzk/mips-cpu/ An 5-stage pipelined MIPS CPU written in Verilog |

Flashable to FPGA board (Basys3)
Use UART to communicate with a PC to simulate memory
(limited by hardware resources on board)

Best project of this course

2017/04-2017/06: **Compiler**

Course Project of MS208 Curriculum Design of Computer Systems
Personal Project

https://bitbucket.org/sxty_zhangzk/mxcompiler/

A compiler for a simple Java-like language
Mainly focus on backend optimization and code generation
Use SSA to optimize codes

One of the best projects of this course
(optimization performance rank 2/21)

2016/07-2016/08: **Google File System**

Course Project of MS106 Principle and Practice of Computer Algorithms

Leader of Group Project

https://bitbucket.org/sxty_zhangzk/ppca-gfs/

An implementation of Google's GFS Paper in Golang
Run on a cluster of ~20 computers

2015/10-2015/12: **Library Management System**

Course Project of CS122 Program Design

Leader of Group Project

<https://github.com/sxtyzhangzk/LiBrother/>

An Library Management System written in C++
Based on Client/Server architecture

Best project of this course