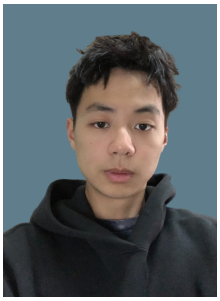
YANG YANG



PERSONAL INFORMATION

birth	*Born in China*, September 2001
personal email	jluelioyang2001@gmail.com
official email	yangyang1519@mails.jlu.edu.cn
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EDUCATION

Undergraduate

Jilin University, Changchun, China
February 2019–Present (junior)
GPA: 3.67/4.0
Rank: 10%
Major: Computer Science and Technology
Interests: Operating System, Computer Architecture and HPC.

RESEARCH EXPERIENCE

ETECA Lab

Emerging Technology Enabled Computer Architecture, Jilin University
February 2022–Present
Lab Website: here
Advisor: Prof. Jingweijia Tan
Research on: Computer architecture & High-Performance Computing

In a nutshell, I am doing research on the **microarchitecture** of General-Purpose Graphics Processing Unit (**GPGPU**). Some classic problem like **scheduler** and **memory system** design are under consideration. Due to the **FinFET** and state-of-the-art **chiplet** (based on package-level integration), nanometer scale is much more reachable, as a consequence, **process variation** is more complex than before. Hence I have also been doing research on **hardware variability** related on Multi-Chip-Module(**MCM**) GPUs.

SKILLS

Programming Languages

C/C++, Assembly(x86, RISC-V), Go
CUDA
Python

Hardware

HDLs: Verilog
Modelsim
Basic analog circuit design

Software

LINUX/UNIX/Windows
GIT
GNU compiler (gcc)

AWARDS

Undergraduate Academic Year Scholarship

Fall 2020 · The First Prize Scholarship

Fall 2021 · The Second Prize Scholarship

PROJECTS

EOS

EOS is a 32bit ***nix** operating system using **x86** instruction set. Though it's a toy model OS, EOS contains a basic **bootloader**, 2-level **paging**, 4GB **memory management** support and **kenel-multithreads**. For user environment, it provide a set of traditional shell programs and **multi-process** mechanism. It follows the x86 ABI, so it's easy to port thoses x86 applications. This project is still *active* and it will provide a glibc-like library and compiler support. You can find the codes here.

MapReduce Engine

MapReduce Engine is a Go language version implementation of the paper *MapReduce: Simplified Data Processing on Large Clusters*. This engine consists of a **fault tolerance**(failures like crash and communication-lose of workers) master and a worker cluster. Users can specify their own cluster size and working functions(map & reduce). With a simulated distributed file system, the workers can communicate with the master through **Remote Procedure Call**. This MapReduce Engine is a basic component for building a distributed system used for operations over large datasets. You can find the codes here.

WYZ-BAR

WYZ-BAR is a bar management system with **multi-process** organization and a simple builtin **relational-database**. WYZ-BAR is a *collaborative project* (WYZ stands for 3 members) and I am the leader. WYZ-BAR is my *first* project in my university life and the development flow follows the modern **free** softwares' way. A lot of **parsing** techniques were used to deal with all kinds of data input, this system is specially optimized for unqualified input like the real world. You can find the codes here.

CUDA-FFT

CUDA-FFT is a CUDA version of the **Fast Fourier Transform** algorithm. This project implemented 3 ways to do the *polynomials multiplication*, including ordinary multiplication, **recursive-FFT** and **gpu-FFT**. The performance was well tested and the contrast was shown in the report. This is my first time doing heterogeneous computing and this project lead me to the research of **HPC & GPGPU**. You can find the codes, slide, and report here.

Others

You can find more projects including course labs (like MIT 6.828) and an Android application(SmogDetector) in GitHub

OTHER INFORMATION

Languages

Chinese · Mothertongue

English · Intermediate (conversationally fluent)

Interests

Literature (Latin-American, magic realism) · Physics · NBA · Running

Characteristic

Strong patience, communication, and collaboration skills.

May 2, 2022