ZIANG TIAN

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EDUCATION

Wuhan University   September 2021-June 2025 (Expected)
Undergraduate student in Computer Science   *GPA: 3.96/4   TOEFL: 111*

· National Scholarship (top 1.5%) in 2022

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PROJECT EXPERIENCE

A 5-level Pipelined RISC-V Processor   May 2023 - July 2023
Vivado, Verilog, C   <u>*Code*</u>

· Implemented a 5-level pipelined CPU on an Artix-7 FPGA board (Nexys A7) in $\sim$ 3000 lines of Verilog.

· Resolved data hazard and control hazard with forwarding and stalling.

· (In Group)Implemented a sudoku game on the CPU (with no OS support).

Implementation of a dynamic memory allocator in xv6 OS   April 2024
C, Qemu simulator   <u>*Code*</u>

· Researched on the structure of the xv6 operating system.

· Implemented a buddy allocator for the xv6 operating system using a self-devised bit-map tree.

Introduction to memory optimization for AI model training October 2023 - December 2023
Cpp, Python   <u>*Slides (In Chinese)*</u>

· Read and presented 13 papers from 2016-2020 on the work of AI model training memory optimization.

· Categorized different works according to their optimization methods.

· Read and researched on the source code of Pytorch concerning data dispatching.

Optimizing data writes in a secure memory system   Ongoing
Cpp, Python, Gem5 Simulator

· Proposing a scheme to reduce write overhead for a secure memory system protected by Merkle Tree and counter mode encryption.

SKILLS

Computer Languages	Python, Cpp, C, Javascript, Verilog, Assembly, C#
Tools	Gem5 Simulator (Learning)
Others	Latex