Juechu Dong

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EDUCATION

University of Michigan – Ann Arbor **Sept. 2022 – (exp.) Apr. 2027**

Doctoral program in Computer Science and Engineering

Specialize in Computer Architecture, Computer Systems and Confidential Computing

Advisor: Prof. Satish Narayanasamy

University of Michigan-Shanghai Jiao Tong University Joint Institute **Aug. 2022**

Electrical and Computer Engineering, Bachelor of Science

University of Michigan – Ann Arbor **Apr. 2022**

Computer Engineering, Bachelor of Science in Engineering

RESEARCH

Accelerating Minimap2 on AMD GPU **May. 2022-present**

- Analyze sequence mapping and alignment software for long reads workload
- Accelerate chaining and alignment on GPU
- Build workload balance and scheduling algorithm to best utilize GPU and CPU resources

A Federated Genomic Analysis System Based on Enclave & SGX **May 2021-present**

- Solve privacy concerns in genomic data sharing without accuracy penalty from metadata studies or performance penalty from homomorphic encryption
- Build a centralized system that collects genomic data from host institutions and analyze them on central server enclave without leaking raw or intermediate data

INTERNSHIP

Deep Learning Architect Intern

NVIDIA **May 2022-Aug. 2022**

- CUDA Optimization, Architectural Analysis, Design and Performance Optimization for GPUs
- Develop ubenchmarks to analyze and optimize DL workload using Hopper new features
- Develop algorithms and benchmarks to optimize multi-GPU communication kernels on Hopper architecture

TEACHING EXPERIENCE

Instructional Aid for Computer Architecture Course

University of Michigan, Ann Arbor MI **Sept. 2021-Present**

- Hold lab sessions regarding out of order processor design topics including branch prediction, scheduling, cache, pipeline etc. and Verilog
- Develop exam questions and answer questions regarding OoO processor topics

SKILLS

Language

- **Chinese** (Native, Mandarin) **English** (Fluent)
- **Proficient in**: C/C++ (System)Verilog, CUDA, scripting (shell)