HAORAN JIN

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Shanghai, China

EDUCATION

Shanghai Jiao Tong University Sep. 2019 - present
B.Eng in Electrical and Computer Engineering   GPA: 3.81   Ranking: 13/255
Relevant Coursework   Logic Design(A^+) Computer Organization(A) Programming & Data Structure(A^+)

HONORS AND AWARDS

- 2020,2021 National Encouragement Scholarship
- 2019,2020,2021 John Wu & Jane Sun Sunshine Scholarship
- 2020,2021 SJTU Undergraduate Scholarship

RESEARCH EXPERIENCE

Secure Non-volatile Memory Based on Out-of-place Update (Prof. Jian Huang)   Jul. 2022 – present

- Implemented MAC and Merkle Tree essential for integrity and confidentiality.
- Utilized Out-of-place updates to improve performance.

Mixed Circuit Design of Binary & Stochastic Computing (Prof. Weikang Qian)   Jan. 2022 – present

- Implemented Tiled Gaussian Blur, Convolution and Sobel Operator in mixed circuit
- Accelerated estimation of error rate through table lookup
- Defined domain-specific language to facilitate mixed circuit developing

Machine Learning for High Level Synthesis (Prof. Jieru Zhao)   Mar. 2021 – Oct. 2021

- Used machine learning such as Graph Neural Network
- Built a program that extracts features from HLS reports and intermediate files

PUBLICATION

Kuncai Zhong, Zexi Li, Haoran Jin, Weikang Qian *Exploiting Uniform Spatial Distribution to Design Efficient Random Number Source for Stochastic Computing* ICCAD 2022

PROJECT

Recommendation System for Big Data

- Implemented Breadth-First-Search on 4 node Hadoop cluster using Spark and MapReduce.

Multi-threaded SQL Database

- Wrote a multi-threaded database supporting SQL-like syntax
- Implemented thread pool and parallel reducer for acceleration

Scheduling Algorithm in Minix 3.2.1

- Implemented Earliest Deadline First and Lottery Algorithm in the kernel space

SKILL

Programing   C, C++, Java, Python, Verilog HDL, SQL, LLVM IR, ELM
Tools   MatLab, PyTorch, Mathematica, Vitis HLS, Spark, Drill, MapReduce, Hadoop, Pin, Pintool