HAORAN JIN

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Shanghai, China

EDUCATION

Shanghai Jiao Tong University   Sep. 2019 - present
B.Eng in Electrical and Computer Engineering   GPA: 3.80   Ranking: 10/162
Relevant Coursework   Logic Design(A^+) Computer Organization(A) Programming & Data Structure(A^+)

HONORS AND AWARDS

- 2020,2021,2022 National Encouragement Scholarship

- 2019,2020,2021,2022 John Wu & Jane Sun Sunshine Scholarship

- 2020,2021 SJTU Undergraduate Excellent Scholarship

RESEARCH EXPERIENCE

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

- Implemented Verilog generator to generate Gaussian Blur, Convolution circuit from C++.
- Accelerated acquisition of error rate through table look up and incremental simulation.
- Defined domain-specific language (C++ with extension) to facilitate mixed circuit developing.

Secure Non-volatile Memory via Out-of-place Update (Prof. Jian Huang at UIUC) Jul. 2022 – present

- Implemented MAC and Merkle Tree traversing essential for integrity and confidentiality.
- Utilized Out-of-place updates to reduce extra memory access.

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

- Programmed to extract features from HLS report and intermediate files.
- Used machine learning algorithm such as Graph Neural Network.

PUBLICATION

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

- Zexi Li, Haoran Jin, Kuncai Zhong, Guojie Luo, Weikang Qian, *SCGen: A Versatile Generator Framework for Agile Development of Stochastic Circuits*, DAC 2023 (Submitted)

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 with thread pool and parallel reducer.

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	PyTorch, MatLab, Mathematica, Vitis HLS, Spark, Drill, Hadoop, Pin, Proteus, Pspice