

# HAORAN JIN

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Shanghai, China

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## EDUCATION

### Shanghai Jiao Tong University

B.Eng in Electrical and Computer Engineering

Sep. 2019 - present

GPA: 3.80      Ranking: 10/162

**Relevant Coursework**      Logic Design( $A^+$ )   Computer Organization( $A$ )   Programming & Data Structure( $A^+$ )

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## 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

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## RESEARCH EXPERIENCE

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

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

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

- Implemented Tiled Gaussian Blur, Convolution and Sobel Operator in mixed circuit
- Accelerated acquisition of error rate through table look up and incremental simulation
- Defined domain-specific language (C++ with extension) to facilitate mixed circuit developing

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

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

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## PUBLICATION

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

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## 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

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## SKILL

### Programing Tools

C, C++, Java, Python, Verilog HDL, SQL, LLVM IR, ELM  
MatLab, PyTorch, Mathematica, Vitis HLS, Spark, Drill, Hadoop, Pin, Proteus, Pspice