David Lu

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Summary

I'm a dedicated electrical engineering student specializing in ASIC design. Skilled in Verilog and System Verilog, I'm currently pursuing my ECE M.Eng at Cornell University. My experience includes working on an innovative ReRAM genome sequence alignment accelerator and designing machine learning accelerators. I'm eager to collaborate and make an impact in ASIC design.

Education

Cornell University
New York, USA

Master of Engineering in Electrical and Computer Engineering — *Aug. 2023 - Present*

National Taiwan University
Taipei, Taiwan

B.S. in Electrical Engineering — *Sept. 2018 - Jun. 2022*

- Courses: Computer Architecture, Computer-Aided VLSI System Design,Integrated Circuit Design, Machine Learning, Electronics, Switching Circuit Design, Electrical Engineering Lab (Digital Circuitry)

Work/Research Experience

Academia Sinica
Taipei, Taiwan

Research Assisstant — *Mar. 2023 - May. 2023*

- Designed a ReRAM in-memory genome sequence aligner accelerator.
- Built a ReRAM python simulator to simulate the performance of our design.
- Sped up the existing genome sequence aligner by 10 to 50 times by harnessing the parallelism of in-memory computing and optimizing the algorithm.

Academia Sinica
Taipei, Taiwan

Summer Intern — *Apr. 2022 - Sep. 2022*

- Investigated different systems' impacts on training recommender system.
- Applied process-in-memory architecture and heterogeneous memory(HBM and DIMM) to accelerate the training time of the recommender system.

National Taiwan University
Taipei, Taiwan

Undergraduate Research Assistant in EECS Lab — *Mar. 2021 - October. 2022*

- Designed a machine learning accelerator that can identify ten keywords from one-second long utterance.
- Sent our design to Taiwan Semiconductor Research Institute and taped out a keyword spotting accelerator..
- Utilize quantization-aware training on keyword spotting to minimize model weights.
- Designed a low-power circuit that can extract MFCC features from one-second long utterances.

Skills

Programming Python, C++, MATLAB
HDL Verilog, SystemVerilog
Frameworks NumPy, PyTorch, Pandas, TensorFlow, Keras
Languages English, Chinese