Krishna Dhulipala

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EDUCATION

University of California, Santa Barbara, Santa Barbara, CA
Fourth-Year Computer Science BS/MS Major in the UCSB College of Engineering.
August 2020 - Present GPA: 3.88

TECHNICAL SKILLS

Languages: C++, Go, C, Python, Nvidia CUDA, PyRTL, Verilog, MIPS Assembly, Java, CSS, HTML, SAS, LaTeX
General: GPU Programming, Computer Architecture, Storage, Machine Learning, Systems Programming, Full-Stack Development, Linear Programming and Optimization, Differential Privacy, Algorithms/Data Structures, Linux, Performance Analysis, Debugging, Testing

EXPERIENCE

Nebulon Inc., Fremont, CA
Software Development Intern in NebOS Group.
Conducted a comparative study of Cuckoo filters and Bloom filters in an effort to optimize read performance on key-value stores. Developed golang unit tests for various structures and techniques utilized in key-value stores, like B-Plus Trees, Skip Lists, Log-Structured Merge Trees, and LRU Cache Eviction.
June, 2022 - September, 2022

Worked on expanding compression options for boot images when downloading them to volumes. Also worked on making uploading and downloading boot images resilient to failures. Enhanced NebOS to extract host OS type and version information from boot images and update the cloud status for display to customers.
December, 2020 - September, 2021

Notetaker for MATH CS 121, UC Santa Barbara
Took notes for distribution to disabled students in a course on Probability.
September, 2021 - December, 2021

RESEARCH

Research on Using Graphics Processing Units to Parallel-Process HDLs
I am currently working with Professor Jonathan Balkind and another undergraduate student to parallelize the processing of HDLs (hardware definition languages) by using GPUs in conjunction with tools for Verilog RTL synthesis. My work is primarily concerned with GPU programming and parallelizing LUT-level simulation using the kernels I have written in CUDA.
June 2024 - Present

Research on Differentially Private Synthetic Data Manufacture
Worked with Professor Trinabh Gupta on implementing an improvement of the MWEM algorithm introduced by Hardt et al. (2010), as well as researching optimized versions of the NIST-MST algorithm from Mckenna et al. (2021).
November 2021 - November 2022

RELEVANT COURSES

CS 165B: Machine Learning, **CS 154:** Computer Architecture, **CS 138:** Automata and Formal Languages, **CS 156:** Advanced Applications Programming, **CS 111:** Numerical Algorithms, **CS 130A-B:** Data Structures and Algorithms I-II, **PSTAT 120B:** Probability and Statistics II, **MATHCS 120FO:** Linear Programming, **MATHCS 120C:** Combinatorics, **MATH 118A-C:** Real Analysis, **MATHCS 121:** Probability, **MATH 111A:** Abstract Algebra, **MATHCS 108A-B:** Linear Algebra

AWARDS

Dean's Honours, College of Engineering

National Merit Commendation
Letter of Commendation awarded for performance on the PSAT/NMSQT.