Ritarka Samanta

(719) 394-8818 ritarka.samanta@gmail.com ritarka.github.io Colorado Springs, CO

Education

Carnegie Mellon University Aug 2024 – Dec 2025
Master of Science in AI Engineering - fulltime resident student *Pittsburgh, PA*

Georgia Institute of Technology Jun 2021 – Dec 2023
Bachelor of Science in Computer Engineering, 3.94/4.0 - fulltime resident student *Atlanta, GA*

Relevant coursework: Statistical Machine Learning, Adv. Data Structures & Algorithms, Adv. Operating Systems, Stochastic Processes, etc.

Skills

Programming: C/C++, Java, Python, Assembly, Bash, CUDA, Open MPI
Math: Linear Algebra, Statistics, Optimization, Calculus
AI/ML: Decision Trees, Neural Networks, SVMs, PCA, Regression, Regularization
Software: PyTorch, Numpy, Pandas, Unix/Linux, Docker, Git, Jenkins

Work Experience

Keysight Technologies Jan 2024 – Aug 2024
Software Engineer II *Colorado Springs, CO*
- Writing C++ driver code to support high-performance oscilloscope hardware
- Overhauled system and test architecture to enable greater resilience, faster compile times, and greater debuggability
- Developing algorithms to calibrate extremely sensitive hardware chips

Cadence Design Systems May 2023 – Aug 2023
Software Engineering Intern *San Jose, CA*
- Automated finding differences in hardware models using Python. Reduced analysis time by a factor of 6
- Updated C/C++ code and removed dependencies on boost library. Developed custom data-structures and string libraries
- Navigated production environment of over 400 million lines of code

Northrop Grumman Jun 2022 – Aug 2022
Hardware Engineering Intern *Baltimore, MD*
- Enabled fully automated testing of hardware network board. Cut debugging time from days to minutes
- Modified C++ application to bypass lengthy setup times of large codebase, speeding up testing by 5 times

Research

HPArch Lab May 2023 – Jan 2024
Researcher *Atlanta, GA*
- Demonstrated flaws in sponsor codebase, wrote an eight-page report on problems and wrote code to alleviate issues
- Upgraded object-detection framework with newer models, decreasing inference time by 15%
- Designed a stacked ML model to obtain balance between mean average precision (mAP) and latency

Sharc Lab Aug 2022 – May 2023
Researcher *Atlanta, GA*
- Developed a tool to enable source-level Vitis HLS debugging, improving development of complex hardware designs
- Composed architecture and coordinated 3 cross-functional teams to manage product development
- Paper: https://ieeexplore.ieee.org/document/10161946

Leadership & Extracurricular

Deep Learning Accelerator Jan 2023 – Jan 2024
Director *Atlanta, GA*
- Organized and trained a group of 6 people to accelerate machine learning algorithm using FPGAs
- Designed parallel hardware in Vitis-HLS to enable faster computation and reduced latency

Volatility Viewer Oct 2022
Georgia Tech Hackathon, awarded cash prize by BlackRock
- Created a data analytics platform to educate investors about market volatility with insights on portfolio management
- Analyzed and plotted economic indicators against a volatility index using Python libraries such as Pandas and NumPy