Yasmin Sarita
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Education:

Cornell University(2017-2021): B.S. and M. Eng. in Computer Science, GPA: 3.9, Dean's List
University of Illinois at Urbana-Champaign(2021-): PhD in Computer Science, Advisor: Gagandeep Singh

Work Experience:

Pointer Analysis research (September 2021-present)
– Designing an online pointer analysis algorithm for Java programs that dynamically adjusts the degree of context sensitivity for different function calls during the analysis

IBM research (June 2020-August 2020, June 2021-August 2021)
– Automated profiling of toolchain of AI Chip Accelerator with a variety of execution backends
– Helped determine bottlenecks in the software of the accelerator and optimized these functions
– Worked on integrating the testing framework with keras applications for better end to end testing
– Determined which operations should be supported in an accelerator to support Transformer networks. Created an exhaustive test framework for this.

HPVM research (June 2019-May 2020)
– Worked under Professor Vikram Adve of UIUC to develop a compiler framework for heterogenous systems that dynamically tuned levels of accuracy given time and performance constraints in a machine learning domain.
– Wrote code to approximate computations in neural networks in order to minimize accuracy loss and tuned the code to optimize efficiency given gpu specifications.
– Implemented depthwise convolution to run 20% faster than the CUDNN method originally used.
– This work led to the publications below.

Publications:

– *ApproxHPVM: A Portable Compiler IR for Accuracy-aware Optimizations* by Hashim Sharif, Prakalp Srivastava, Muhammad Huzaifa, Maria Kotsifakou, Keyur Joshi, Yasmin Sarita, Nathan Zhao, Vikram Adve, Sasa Misailovic, Sarita Adve (OOPSLA/SPLASH 2019), Athens, Greece, October 2019.

– *ApproxTuner: A Compiler and Runtime System for Adaptive Approximations* by Hashim Sharif, Maria Kotsifakou, Yifan Zhao, Benjamin Schreiber, Elizabeth Wang, Yasmin Sarita, Nathan Zhao, Keyur Joshi, Vikram Adve, Sasa Misailovic, Sarita Adve. (PPOPP 2021).

Projects:

– Implementing algorithms to effectively allocate food to foodbanks based on inventory and demand as part of a system being built under Professor Oliver Gao.
– Implemented functions related to homomorphic encryption for a research project for Adrian Sampson.
– Built prototype using Xwiki of a website for a CS course taught by Michael George.
– Developing a game that allows children to learn about and interact with DNA and genetic engineering.
– Helped create a compiler that included a lexer, parser, IR and assembly code generator for an Object Oriented Language.

Skills/Interests:

- Programming Languages: Python, C/C++, CUDA, Java, R, Javascript, Ocaml, SQL, Datalog
- Head TA/TA for discrete structures, computer architecture and physics courses (2018 – 2021)
- Corporate Liaison and Community Outreach Director for Society of Women Engineers (2017-2020)
- Editor for Ezra's Archives(2017-2020)
- Distinguished Undergraduate TA Award (Fall 2020)