RACHANA AITHAL

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EDUCATION

Georgia Institute of Technology   Aug 2022 - May 2024
Master of Science, Computer Science | GPA: 4.0/4.0

PES University   Aug 2016 - Jul 2020
Bachelor of Technology, Computer Science | GPA: 9.57/10

RESEARCH EXPERIENCE

Department of Computer Science, Georgia Tech, *Graduate Thesis*   Aug 2023 - Present
· Leveraging Application information for optimizing DRAM schedulers.

Department of Computer Science, Georgia Tech, *Graduate Research*   Jan 2023 - Jun 2023
· Leveraging perceptron based cache miss predictor to hide memory access latency.
· Using user-level threads and rapid context switching in user space to mitigate the effects of long memory delays.

Center for Cloud Computing and Big Data, PES University, *Undergraduate Research* Jan 2018 - Jan 2020
· Co-authored a poster paper titled *"Hardware Accelerated Matrix Multiplication using a 400 MHz Systolic Array on a CPU+FPGA Platform"* presented at *VLSI design conference 2020*, the submission won the best poster paper award in the user design track category
· Developed a *patent pending* "Elastic Pipelines for Data Processing (in hardware)", No. 201941028170 filed at the Indian patent office

Department of Computer Science, PES University, *Undergraduate Thesis*   Aug 2019 - Jun 2020
· Co-authored a paper *"Exploration of Cross-lingual Summarization for Kannada-English Language Pair"*, Conference Proceedings of *17th International Conference on Natural Language Processing (ICON 2020)*
· Generated first ever high-quality Kannada-English dataset using back translation mechanism

WORK EXPERIENCE

Google, *HW Intern*   May 2023 - Aug 2023
· Collaborated with Google's cloud TPU and network chips design teams to develop an automated System Verilog UVM test bench and test environment creation tool for module design specifications.

Amazon, *SDE*   Jan 2020 - Jul 2022
· Built a transpiler to convert code in a flavour of TypeScript to Java
· Designed and developed support for partners to onboard a new type of feature on the Retail Website Detail page
· Worked on large-scale internal service migration and software upgrades on the Amazon Detail Page
· Was responsible for Retail Website Detail Page preparation for a peak sale event on Amazon worldwide

Walmart Labs, *SDE Intern*   May 2019-July 2019
· Contributed to the B2B website in India, included working on SAP, Spring Boot, and basic Hybris

PROJECTS

- Implemented a Map-reduce processing system and deployed on azure.
- Designed and developed **pipe stage modules** on FPGAs as an alternative for FIFO queues for data transfer, along with splitter and merger extensions for better data input and output.
- Implemented simple **distributed key-value store** that is scalable, available, and resilient to temporary node failure.
- Implemented a C++ simulation of in-order and out-of-order **multi-stage pipeline** and branch prediction.
- Built **NLP preprocessing library** in C.

ACTIVITIES

- **Teaching assistant** to a Graduate Level 'System design for Cloud Computing' course in GaTech
- **Teaching assistant** to a Graduate Level 'High Performance Computer Architecture' course in GaTech
- **Teaching assistant** for 'Digital Design and Computer Organization' course and Lab in PESU
- **Runner-up** in the Hactober fest, a coding competition by conducted by ACM-W, PESU
- Volunteer at the Peer Teaching Program at PESU to help other students with their academics

SKILLS

Programming Languages	Python, C/C++, SQL, Verilog, HTML, JS, Java, Perl, Mason
Skills	Azure, Shell, Intel Quartus, ZSim, Arduino