

# RACHANA AITHAL

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## EDUCATION

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### 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

CGPA: 9.53/10

## RESEARCH EXPERIENCE

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### Department of Computer Science, Georgia Tech, Graduate Thesis

Aug 2023 - Present

- Leveraging Application information for DRAM schedulers.

### Department of Computer Science, Georgia Tech, Graduate Research

Jan 2023 - Jun 2023

- Leveraging a cache miss predictor to hide memory access latency.
- Use 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)*

## WORK EXPERIENCE

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### Google, HW Intern

May 2023 - Aug 2023

- Worked with the Google cloud network chips design and verification team.
- Designed and built a comprehensive tool for Automatic generation of UVM test benches for a given module design specification.

### Amazon, SDE, SDE Intern

Jan 2020 - Jul 2022

- Designed and developed support for partners to onboard a new type of feature on the Retail Website Detail page
- Built a transpiler to convert code in a flavour of TypeScript to Java
- 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

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- Implemented **fast regular expression matching on FPGAs** using Nondeterministic Finite Automata(NFA)
- Built **NLP preprocessing library** in C
- 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 a C++ simulation of in-order and out-of-order multi-stage pipeline and branch prediction.
- Implemented simple distributed key-value store that is scalable, available, and resilient to temporary node failure.

## ACTIVITIES

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- Teaching assistant to a Graduate Level Computer Architecture course in GaTech
- **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

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### Programming Languages

Python, C/C++, SQL, Verilog, HTML, JS, PHP, Django, Java

### Tools

Arduino, Intel Quartus, Shell