HEMANG DASH

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Education

Georgia Institute of Technology, Atlanta, GA, U.S.A.
- ○ **M.Sc.** in Computer Science (Computing Systems) — *Expected Graduation: May 2024*
- ○ **B.Sc.** in Computer Science (Threads: Systems & Architecture, Intelligence) | **GPA: 3.88** | *May 2023*

Certifications

- ○ **AWS Certified Developer – Associate** | Amazon Web Services (AWS) | *Aug 2023*

Industry Experience

Meta, *Software Engineer Intern* — *May 2022 – Aug 2022*
- ○ Spearheaded the adoption of GraphQL over GraphAPI, resulting in a 15% improvement in load times, increased flexibility in data retrieval, and improved code quality.
- ○ Revamped Meta Business Suite's Brand Safety Hub Overview using React, Hack, GraphQL, and Relay to ensure brand safety on all Meta platforms while simplifying ad placement.
- ○ Recognized as the fifth highest contributor in Facebook Integrity's code hub.

NCR Corporation, *Software Engineer Intern* — *May 2021 – Aug 2021*
- ○ Designed and implemented a REST API and an Angular solution in .NET Core that eliminated manual customer information transformation, resulting in a 10x faster onboarding process.
- ○ Developed an Angular-powered solution in .NET Core to enable NCR Marketplace's sites to be validated against various tax services, enhancing the user experience.

Academic and Research Experience

Georgia Tech, *Graduate Teaching Assistant (Advanced Operating Systems)* — *Aug 2023 – Present*
- ○ Designed course materials to assess student's understanding of graduate-level topics in OS, distributed and parallel systems.
- ○ Held weekly office hours to help students overcome conceptual blocks, debug code, and learn new course material.

Prog. Languages & SWE Group, Georgia Tech, *Research Assistant* — *May 2023 – Present*
- ○ Engineered and established a robust infrastructure to systematically identify and diagnose bugs in LLDB's behavioral performance across diverse compilation optimization levels.
- ○ Identified and reported critical bugs in LLVM project, actively improving compiler and debugger stability and reliability.

EPL Surveillance Group, Georgia Tech, *Research Assistant* — *Jan 2022 – May 2022*
- ○ Analyzed workload to test enabling a FaaS platform to operate efficiently over a geo-distributed continuum of edge clusters, to serve requests and avoid any one edge-cluster from violating latency requirements.
- ○ Utilized a SUMO script to generate random activity of vehicles in a city over a period of 36 hours and assigned each vehicle to an edge site closest to it using the Euclidean distance heuristic.

Georgia Tech, *Undergraduate Teaching Assistant (Computer Systems and Networks)* — *Aug 2021 – Dec 2022*

Projects

Shared Key-Value Store using PAXOS — *Aug 2023 - Present*
- ○ Developed fault-tolerant distributed systems resembling Google Spanner using Java, gaining hands-on experience with modern distributed computing approaches, including implementing exactly-once RPC protocols, primary-backup fault-tolerance protocols, PAXOS consensus algorithms, and a sharded Key-Value store with a two-phase commit protocol.

Load-Balancer Software-Defined Network — *Aug 2023 - Sep 2023*
- ○ Designed and implemented an SDN (Software-Defined Networking) controller using Ryu for a network topology that dynamically adapts to changes in switches and traffic patterns, which involved creating OpenFlow rules for shortest-path and widest-path routing, as well as proactive rule management based on real-time network usage statistics.

Community Willingness and Capability Score (CWCS), *iParametrics, LLC* — *Aug 2022 – May 2023*
- ○ Web app built using React, Jupyter, Azure SQL and Python Flask that shows the CWCS of different communities in the US, computed using an ML algorithm to determine strategic and equitable investments in disaster mitigation efforts.

vCPU Scheduler and Memory Coordinator — *Sep 2022*
- ○ Scheduler built in C that tracks virtual CPU utilization of VMs and load balances them across physical CPUs.
- ○ Memory coordinator built in C that tracks each guest machine's memory utilization and decides how much extra free memory should be allocated to each guest machine using the balloon driver.

Extra-Curriculars

India Club at Georgia Tech, *President* — *Apr 2022 – Apr 2023*
- ○ Managed the largest student-run organization at Georgia Tech by leading a board of over 70 members.
- ○ Corresponded with University Administration for increasing outreach and serving the needs of thousands of people.

Skills

Computer Languages: Java, Python, C, C++, JavaScript, Hack, GraphQL, SQL, Assembly, HTML5, CSS, VHDL

Frameworks/Platforms: AWS Lambda, DynamoDB, Amazon EC2, Amazon S3, Azure SQL, Docker (Containers), React, Python Flask, GitHub, Angular, .NET Core, Flutter, Firebase, Altera Quartus, Microsoft Office, LibreOffice, Android Studio, Jupyter