

Anirudh Sarma

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EDUCATION

- **Georgia Institute of Technology** Atlanta, GA
PhD in Computer Science Aug 2020 – Present
- **Georgia Institute of Technology** Atlanta, GA
Master of Science in Computer Science Aug 2018 – Apr 2020
- **Manipal Institute of Technology** Manipal, India
Bachelor of Technology in Computer Science and Engineering Jul 2012 – Jun 2016

SKILLS

- **Languages:** C/C++, Python, Java, SQL, Bash, Perl, JavaScript, Go
- **Tools and Frameworks:** Protobuf, gRPC, Azure, Docker, Zookeeper, GTest, GLOG, Boost, D3, Selenium, GDB, Perforce, Git, Flask, CMake, make, ZeroMQ, Kubernetes

ONGOING RESEARCH

- **Federated resource orchestration**
Current effort: geo-distributed edge sites may be grouped in classes which represent the latencies they guarantee. Effective load balancing across such sites in a scalable and deterministic fashion is paramount to efficient & judicious use of resources. Investigate and explore techniques to enable federated resource orchestration. **Tech:** Kubernetes, Go, Linux
- **Bandwidth-Aware resource scheduling**
Current effort: Existing resource orchestrators ignore bandwidth between application service components and are unsuitable for resources deployed in a mesh network. Formalize and explore solutions for bandwidth-dominant workloads for wireless mesh networks. **Tech:** Kubernetes, Go, Linux
- **Optimizing resource scheduling for containers**
Maximize system efficiency for end-hosts running containers. **Current effort:** Evaluate resource scheduling techniques developed at Embedded Pervasive Laboratory in a Kubernetes scheduler to colocate latency sensitive & batch container workloads. **Tech:** Kubernetes, Linux, C.

PUBLICATIONS

- Manasvini Sethuraman, **Anirudh Sarma**, Ashutosh Dhekne, and Umakishore Ramachandran. Clairvoyantedge: Prescient prefetching of on-demand video at the edge of the network. In *Proceedings of the 7th ACM/IEEE Symposium on Edge Computing*, SEC '22. Association for Computing Machinery, December 2022
- **Anirudh Sarma**, Hamed Seyedroudbari, Harshit Gupta, Umakishore Ramachandran, and Alexandros Daglis. NFSlicer: Data Movement Optimization for Shallow Network Functions. March 2022
- Manasvini Sethuraman, **Anirudh Sarma**, Ashutosh Dhekne, and Umakishore Ramachandran. *Foresight: Planning for Spatial and Temporal Variations in Bandwidth for Streaming Services on Mobile Devices*, page 227240. Association for Computing Machinery, New York, NY, USA, 2021

PROFESSIONAL EXPERIENCE

- **Intel** Santa Clara, CA
Graduate Intern — Extreme Scale Computing Summer 2022
Research & documentation of control flows for the PIUMA Runtime which enables efficient graph processing on a novel unified memory architecture. Software Engineering aspects involved devising telemetry strategies to improve debugging efforts.

- **Bloomberg**

New York City, NY

Software Engineering Intern

- **Fall 2021** - Developed a Kafka Streaming Application to compute real-time aggregates of Fixed Income Liquidities and built a QC infrastructure for correctness and benchmarking against current service oriented architecture
- **Summer 2020** - Developed a general purpose Search Usage Streaming pipeline to allow real time ingestion into datastores such as Solr, Cassandra, HDFS for real time aggregation and analytics.

- **Apple**

Cupertino, CA

Software Engineering Intern — Accessibility

Summer 2019

Designed and built an all-purpose application agnostic crawler to crawl through native macOS applications to identify UI defects. Developed a Generic and extensible design to enable crawling for user specified issues with heuristics to observe and identify changes in UI layout with smart storage of UI flows, to allow easy reproduction of the desired state.

- **Citrix**

Bengaluru, Karnataka

Software Engineer — Cloud & Networking Group

July 2016 - June 2018

- Contributed as a developer on the NetScaler configuration infrastructure team. Helped reduce the bug backlog by **40%**
- Refactored NetScaler APIs to improve code reuse, readability and security
- Designed and developed a test framework to improve the NetScaler REST API codebase coverage by **25%**

- **SanDisk**

Bengaluru, Karnataka

Software Engineering Intern — USB Team

Summer 2015

Developed a developer tool for editing binary USB firmware configuration file

ACADEMIC EXPERIENCE

- **Georgia Institute of Technology - Graduate Teaching Assistant**

Jan 2019 - may 2021

Courses:

- System Issues in Cloud Computing
- Advanced Operating Systems (Head TA)

Duties:

Responsible for developing, managing and grading systems oriented programming assignments, as well as assisting students through the course.

- **Georgia Institute of Technology - Graduate Research Assistant**

Jan 2022 - May 2022

Lab: Embedded Pervasive Lab, ***Lead:*** Dr. Umakishore Ramachandran

Research & Exploration of low cost solutions to improve connectivity in Westside Atlanta to overcome the digital divide

AWARDS

- **The Donald V. Jackson Fellowship:** Georgia Tech, Atlanta, GA, 2020
- **INSPIRE Scholarship:** Ministry of Science and Technology, India, 2012