Dhyey Thummar

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Education

Georgia Institute of Technology — Atlanta, GA
Master of Science in Computer Science; GPA: 4.00 — *Aug. 2024 – Present*

Indian Institute of Technology — Gandhinagar, India
Bachelors of Technology in Computer Science and Engineering; GPA: 3.66 (9.15/10.0) — *Nov. 2020 – May 2024*

Experience

Research Intern — May 2023 – Jul 2023
California Institute of Technology (CalTech) — *Pasadena, CA*

- Developed ZARTH Android App, an augmented reality application for gamifying astronomy, implementing user accounts, leaderboards, and Firebase/Firestore integration using Android Studio and Java
- Optimized algorithms for displaying transient astronomical objects using Python, and integrated Google Analytics, Firebase Analytics, and Google Cloud APIs for user insights and improved engagement

Network Security Intern — May 2022 – Oct 2022
Eficens Systems — *Hyderabad, India*

- Developed a robust system for identifying and intelligently predicting security flaws in routers, firewalls of leading OEMs
- Analyzing the network configurations of various networking devices, identifying potential threats, and testing new network security protocols and applications.

Projects

Dynamic Resource Allocation for Datacenters | *Autoscaling, Load Balancing* — Aug 2024 – Present

- Developed strategies for dynamic resource allocation to optimize server utilization across running, warm, and idle states while maintaining peak efficiency.
- Focused on enhancing power efficiency and performance through innovative workload distribution and energy-aware server management.

DPU Operational Modes Analysis | *Kernel IP stack* — Aug 2023 – Dec 2023

- Conducted a study on NVIDIA's BlueField DPUs, characterizing operational modes and evaluating logical modes for latency, throughput, and application benchmarks
- Assessed performance using kernel IP stack and bypass mode, concluding that hardware offload modes exhibit better throughput and lower latency

Scalability of Temporal Graph Neural Networks | *GNNs, GraphSAGE* — Feb 2023 – Apr 2023

- Investigated the scalability of Temporal Graph Neural Networks (GNNs) in dynamic graph representation learning
- Created a dynamic rainfall network dataset (1900-2018) and conducted experiments on static and dynamic GNN models

Gossip: Python-based Interpreter | *Python, Compiler Design* — Jan 2023 – Apr 2023

- Developed a Python-based interpreter/compiler for Gossip-lang for concise coding in small projects
- Implemented features including various data types, lists, assignment, conditionals, loops, and static type checking

Publications

- **Dhyey Thummar**, Iram Nawab, Sameer G Kulkarni. "Distributed In-band Network Telemetry" - In *2023 IEEE/ACM 23rd International Symposium on Cluster, Cloud and Internet Computing Workshops (CCGridW)*

Technical Skills

Languages: Python, C#, Java, C, C++, GO, MATLAB, Lua, JavaScript, Verilog
Tools & Technologies: AWS, GCP, DOCA, CUDA, DPDK, Bash Scripting, Git, Linux, Unity, Blender