

CHIRAG C DASANNACHARYA

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EDUCATION

University of California, San Diego - MS Computer Science (Systems Track) 2022 – Dec 2023 (Expected)
Birla Institute of Technology and Science, Pilani - BE Computer Science (with Distinction) 2018 – 2022

EXPERIENCE

Arista Networks Santa Clara
Intern | [Network Software](#) | C/C++, Python Jun – Sep 2023 (Ongoing)

- Built a network security debugging tool that simulates firewall behavior on the router based on configured policy
- Added IPv6 support for VXLAN tunnel endpoints and optimized TCAMs on the Broadcom Trident chipset family

Nutanix (Remote) Bangalore
Intern, Member of Technical Staff | [Distributed Systems, Cloud Storage](#) | C/C++, Python, Go, AWS S3 Jan – June 2022

- Eliminated operational costs associated with multi-cloud garbage collection and simplified workflows
- Upgraded multi-cloud garbage collection to make use of AWS S3 lifecycle policies and object versioning
- Integrated an S3 object-based protocol server with Nutanix's distributed file server to provide S3 access to file storage

PROJECTS

Distributed File Storage and Synchronization | [File Servers, Networks, Raft, Golang, gRPC](#) 2023
Implemented a distributed, versioned file handling system with data and metadata nodes coordinated using RAFT on RPCs

Kernel Benchmarking | [Kernel, Systems](#) 2022
Studied optimizations and wrote benchmarks for kernel subsystems including processes, system calls, file systems, networks, etc

High Performance Computing | [Parallel Computing, SIMD, CUDA, MPI](#) 2022
Optimized matrix multiplication for single- and multi-core CPUs using cache-locality, vector instructions and OpenMP and for GPUs with shared memory and coalescing. Achieved near library performance (90+% for CPUs, 75+% for GPUs)

Cloud Orchestration System | [\(Link\)](#) | [Distributed Systems, Network Programming, Python](#) 2021
Led a team building a (Kubernetes-like) cluster system running containers with orchestration, autoscaling, monitoring, etc

Compiler, Interpreter | [\(Link\)](#), [\(Link\)](#) | [Programming Languages, C, Rust](#) 2020 - 2023
Wrote a compiler in Rust, writing an interpreter for another language strictly in C. Includes heap allocation and GC

PUBLICATIONS

Multi-Robot Unknown Area Exploration Using Frontier Trees | [\(DOI\)](#) | IEEE IROS 2022 Oct 2022
Automated generation of floorplans with non-rectangular rooms | [\(DOI\)](#) | Graphical Models May 2023

SKILLS AND COMPETENCIES

Programming Languages: C/C++, Python, Java, Golang, Rust
Frameworks and Tools: Linux, Multi-threading, GDB, RPCs, Git, AWS, Docker, REST APIs
Courses - [Operating Systems, Computer Architecture, Cloud Computing, Networks, Parallel Computing, Compilers](#)

ACHIEVEMENTS AND ADDITIONAL EXPERIENCE

DatakreW/NTU Singapore - Summer 2021 NTU Connect intern on DatakreW's IoT platform (data processing flows, testing)
BISAG-N Gandhinagar - Summer 2020 Research Asst (Wrote a QGIS python-plugin to get temperature from Landsat images)
BITS Pilani Merit Scholarship - 2020-22 - Awarded to top 3% of students each semester, 6 time awardee
ACM Student Chapter BITS Pilani - 2018-22 - Core Team member
International Linguistics Olympiad - 2017 bronze medal winner and 2018 participant