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Soham Dongargaonkar

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Education

Rochester, NY **Rochester Institute of Technology** **August 2018 – May 2021**

- Master of Science in Computer Science. GPA: 3.87/4
- Coursework: Object-Oriented Programming; Data Structures; Foundations of Algorithms; Computer Networks; Operating Systems; Parallel Computing; Homomorphic Encryption; Programming in Rust

Manipal, Karnataka **Manipal Institute of Technology** **August 2014 – August 2018**

- Bachelor of Tech in Information Technology. GPA: 7.68

Employment

Sr. Systems Software Engineer **Motorola Solutions** **July 2021 – Present**

- Working as a back-end engineer on a highly reliable, low latency integration tool that is used to connect various Motorola applications without a P2P model between the products.
- Tech stack: C#; Microsoft ServiceBus/Kafka, CosmosDB; Microsoft Azure; Docker; Kubernetes

Software Developer, Co-Op **Motorola Solutions** **January 2020 – August 2020**

Software Developer on the drone team (Django, Angular, Google Cloud Platform)

- Identified and fixed critical race conditions in the Angular App resulting in 100% reliable translations.
- Load tested the backend using Locust by simulating API calls.
- Improved the performance of an API in Django resulting in **95% faster** response times.
- Created CI/CD Azure Pipelines to deploy microservices in parallel, decreasing time to deploy by **85%**.

Software Developer, Intern **Avalon Labs** **December 2017 – July 2018**

- Programmed a link shortening application. Used indexes to reduce lookup time to $\mathcal{O}(1)$.
- Created and managed payment gateways (PayPal and Stripe API).
- Developed a Chrome Extension by adding custom RESTful routes to allow quicker link creations.

Software Projects

pegasusDB (github.com/a3y3/pegasusDB) **Distributed Key/Value Store** **June 2022 – July 2022**

- Implemented a distributed, linearizable, **fault tolerant** data store on top of Raft.
- Tested on a suite that emulates unreliable networks, partitions, server crashes with concurrent requests.

Raft (github.com/a3y3/Raft) **Distributed State Machine** **March 2022 – May 2021**

- Implemented the Raft protocol in Go with leader election, log replication, persistence and log compaction.
- Handled network partitions, **node crashes**, and **concurrent memory accesses** across threads.
- Tested thoroughly using a robust test suite.

MapReduce (github.com/a3y3/MapReduce) **Map Reduce Library** **March 2022**

- Implemented a fault tolerant Map Reduce library in golang.
- Added support for automatically detecting failed nodes and reassigning tasks to other nodes.

crust (github.com/a3y3/crust) **Distributed Hash Table** **March 2021 – May 2021**

- Implemented **Chord in Rust** with automatic node discovery and failure handling.
- Developed a **Distributed Hash Set** on top of Chord.

Katalog (github.com/a3y3/Katalog) **CRUD app in Flask** **May 2019 – June 2019**

- Developed an item cataloger in Python with Flask, with focus on scalability and performance.
- Integrated Google OAuth 2.0 for secure logins.
- Eliminated the 'n+1 query problem' by doing complex joins on three separate tables.

Languages and Technologies

- Rust; Golang; C++; C#; Java; Python; Ruby; PHP; SQL; PostgreSQL; JavaScript, jQuery, HTML, CSS; REST API
- .NET, Django; CosmosDB; Docker; Kubernetes; Google Cloud Platform; Azure Cloud, Azure Pipelines; Ruby on Rails; Flask; SQLAlchemy; Git; HTTP, TCP, UDP