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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; Computer Networks; Foundations of Algorithms; Parallel Computing; Quantum Computing; Homomorphic Encryption; Programming in Rust

Udacity — **Full Stack Nanodegree** — **May 2019 – July 2019**

- Built a tool to analyze website data from an SQL database containing over a million records.
- Created a secure database-backed web application with full CRUD capability.
- Deployed the web application to a secure, live web server (Amazon AWS – LightSail)
- Technologies used: Python, Flask, JavaScript, PostgreSQL, SQLAlchemy, WSGI, Apache, Git, AJAX

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

- Bachelor of Tech in Information Technology. GPA: 7.68

Employment

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 pipelines (Azure Pipelines) to deploy microservices in parallel to Google App Engine, which decreased 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

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.
- Extensively used docker containers throughout testing and development.

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.
- Hosted the app on Amazon AWS with Apache & secured the server with firewall and restricted access.

Ripcom (github.com/a3y3/Ripcom) — **Network Simulator + Protocol** — **February 2019 – April 2019**

- Implemented RIPv2 in Java including Split Horizon, Poisoned Reverse and Triggered Updates.
- Developed Ripcom Protocol, a reliable protocol over UDP that uses fewer packets than TCP.
- Tested custom router topologies using docker containers.

Languages and Technologies

- Rust; Java; Python; Ruby; PHP; SQL; PostgreSQL; JavaScript, jQuery, HTML, CSS; Bootstrap; REST API
- Django; Angular; Node.js; Docker; docker-compose; Google Cloud Platform; Azure Devops, Azure Pipelines; Ruby on Rails; Flask; SQLAlchemy; Git; HTTP, TCP, UDP