

NAGARAJ MADAMSHETTI

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EDUCATION

North Carolina State University

Raleigh, North Carolina

Master of Computer Science, GPA: 4.0/4

August 2022 – May 2024

- Courses: Algorithms, Software Engineering, Linux Networking, Cloud Computing, Operating Systems

TECHNICAL SKILLS

Networking: ARP, Ethernet, Virtualization, BGP, IS-IS, Namespaces, ICMP, IP Tables, OSPF, Subnetting, TCP/IP, UDP, HTTP, Ansible, ConfD, DHCP, DNS, eBPF, Kubernetes, Linux, LTTng, Yang

Programming Languages: Python, Java, C, C++, SQL, Javascript, HTML/CSS

Web Development: NodeJs, ReactJs, Angular, PostgreSQL, Jenkins, Docker, MongoDB, REST APIs, Redis

Developer Tools: Git, VS Code, Postman, PgAdmin, AWS, MongoDB, Elasticsearch

WORK EXPERIENCE

Arrcus

San Jose, California

Network Software Engineering Intern

June 2023 – August 2023

Involved in building ArcOS - An OS for network infrastructure in Data Center, Cloud, and 5G.

- Extended "show **BGP** neighbor" command to incorporate dynamic BGP peers by implementing Operational Data Store in ConfD and implemented show command for **EVPN-VPWS** tunnel configurations using YANG, ConfD and C.
- Designed and implemented process monitoring tool to analyze resource utilization using **pidfd_open**, **eBPF**, **LTTng**. Metrics referred file descriptors, memory usage, power consumption, and thread counts, enabling efficient resource management and rapid troubleshooting using **gdb**.

West Agile Labs

Hyderabad, Telangana, India

Associate Software Development Engineer

January 2020 – April 2022

Fullstack developer for TryCents Software: Designed and developed a robust application using agile methodology and followed test-driven development to handle over a million users.

- Designed UI components using **Figma** and implemented frontend using **ReactJs**, **React-Native** and **Redux** frameworks. Implemented Class and Functional Components along with **lazy loading**.
- Refactored legacy code to ES6 and optimized the search queries, significantly minimizing the average response time. Implemented backend services using **NodeJs**, **ObjectJs** & **Sequelize** frameworks, and **ElasticSearch** following pipeline pattern approach.
- Integrated with the APIs of market-leading third-party applications like Twilio, Doordash, Uber, Stripe, and Google to implement the delivery functionality.

Neiman Marcus

Remote

Freelance Full Stack Software Developer

- Leveraged serverless architecture, including several AWS services with deployment through Jenkins & Terraform.
- This infrastructure supported the processing of 3 million records in a single instance and employed Glue and Lambda jobs to harness Apache Spark for high-speed data processing.

ACADEMIC PROJECTS

Linux Networking - Content Delivery Network (CDN) | *Ansible, Etcd, YAML, Python*

- XaaS Cloud Service to Tenants: Create VPC, Cache & Serve
- Created a fully functioning **CDN service called 'Quickly'** by acting as a cloud provider to a customer
- Used **etcd db** to store states of running Docker Containers, **CDN Nodes as a Kubernetes inspired feature**.
- Customer provides VPC requirements as a **YAML file** which is monitored for changes by a Python watch function in the **etcd database and triggers Ansible scripts in Southbound** to deploy the required services.
- Github Repository & full documentation: <https://github.com/nagarajumadamshetti/quicklyv2>

Software Engineering - Wolfcare | *Javascript, Python, ReactJs, Flask*

- Enhanced user interface of a healthcare application. Refactored the frontend code to **ReactJS**, and backend code to the **Flask** using Python. Added new functionalities to enhance user experience.
- Improved the application's reliability, readability, testing, along with improving **API** performance.