

Manoj Nandakumar

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Education

SUNY at Stony Brook

New York

MS in Computer Science

Aug 2022 - May 2024

- Subject: Operating System, Theory of Database Systems, Computer Vision, Artificial Intelligence.

SRM Institute of Science and Technology

India

B.Tech in Computer Science Engineering

Jun 2018 - May 2022

- Subject: Design and Analysis of Algorithm, Advance Programming Practice.

Work Experience

Fresh Digital

India

Software Developer { ReactJS, Flutter, ExpressJS, NodeJS, MongoDB, Kubernetes, Docker, Nginx, Jenkins, Jira }

Aug 2021 - Aug 2022

- Implemented a streamlined process for automated targeted marketing using the **MERN stack** in collaboration with a marketing firm resulting in a **40% average conversion rate**.
- Designed **RESTful API using ExpressJS** for a web application handling **50k daily API requests**.
- Developed a user-friendly SaaS Dashboard in the marketing product, reducing client **onboarding time by 50%**.
- Enhanced server workflow by **implementing CI/CD pipelines with HPA(Kubernetes)** for automated deployments Achieving **zero downtime**.
- Worked on a **quiz app using flutter**, integrated the back-end, implemented push notifications with Firebase, and local storage caching.
- Wrote **micro-services in JavaScript** for a cross-platform quiz application.

Dataviss Analytics

India

Backend Developer Intern { ExpressJS, NodeJS, MongoDB, Node-RED, AWS }

Jan 2021 - Apr 2021

- Developed back-end flow using ExpressJS for a NOKIA product, handling **50 million data points** to enable successful IoT solutions.
- Developed a technical dashboard for in-depth analysis of edge device performance.
- **Optimized existing system architecture by 20%, increasing performance speed of analyzing large data-set by 40%** by upgraded existing aggregate pipelines.
- Implemented **Kafka** for real-time data streaming and integrated it into the **system for logging and analyzing critical system metrics**.

Skills

Programming Language Java(Prior Experience), CPP(Expert), JavaScript(Prior Experience), HTML, CSS, Python.

Framework ReactJS, VueJS, Flutter, Flask, ExpressJS, Spring.

Cloud Application Nginx, Apache, Docker, Kubernetes, CICD (Jenkins, Git, PM2), Firebase.

Miscellaneous Jira, OS(Ubuntu, Linux), AWS, GCP, RAFT(Distributed System), Shell, LaTeX.

University Projects

ReDoS Fuzz: Regex Denial of Service in JavaScript

New York

SUNY at Stony Brook

Aug 2023 - Dec 2023

- Developed a gray box fuzzer to induce ReDoS attacks by exploiting the backtracking feature of the JavaScript regex engine, adding hooks for regex coverage and generating input based on that coverage.

RAFT - C++ (distributed system)

New York

SUNY at Stony Brook

Nov 2023 - Dec 2023

- Created a distributed storage system by implementing the RAFT consensus algorithm, achieving strong consistency and fault tolerance for all operations across the system.

SAM: Enhancing the responsiveness of the Linux CFS scheduler - C

New York

SUNY at Stony Brook

Apr 2023 - May 2023

- Developed SAM, a fair scheduler enhancing CFS interactivity with an interactivity scoring mechanism inspired by ULE.
- Conducted benchmarks to evaluate performance improvements in single-threaded and multi-threaded applications, aiding performance optimization strategies.

OffYouPay - Java, Android, Spring

New York

Self

Jan 2023 - Feb 2023

- Create a Java-based offline payment system for gas stations, allowing customers to purchase fuel credits within a mobile application. Users can buy credits in advance and utilize them for fuel purchases at gas stations without requiring an active internet connection during the transaction.