

SABARISH MUTHUMANI NARAYANASAMY

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Experience

Virginia Tech IT

July 2024 - Present

Graduate Assistant

Blacksburg, Virginia

- Administered and optimized Linux systems (Ubuntu, CentOS), configured Cisco switches and firewalls, using Bash and Python scripts. Integrated Zabbix (tested Grafana and Prometheus too) using PostgreSQL as an observability tool, a complete monitoring solution within a single platform.
- Provisioned and automated hardware resources using Ansible, Terraform and scripts, implementing secure 2FA authentication and enabled a real-time streaming platform through Apache Kafka on AWS for Data Engineering course.

Mouri Tech

May - July 2024

AI Analyst Intern

Irving, Texas

- Developed an interactive chatbot that utilized Azure AI, LLM OpenAI APIs and prompting techniques for the Retrieval-Augmented Generation (RAG) application using GraphQL concepts. This solution directly contributed to an impressive 40% reduction in the time spent on manual hiring processes, significantly enhancing overall team productivity. Key features include Azure Vector Search, Azure Document Intelligence and Question Generation for Interview Screening.

Cisco Systems, Inc.

April 2022 - August 2023

Software Engineer

Bangalore, India

- Developed and deployed scalable SaaS platforms by customizing end-to-end asynchronous REST APIs for user creation in Tenant Management using Java Spring Boot, adhering to Agile principles and collaborating with distributed teams.
- Resolved critical issues involving XSS vulnerabilities, Apache Kafka lags, Camunda workflow optimizations, and Angular updates, ensuring seamless application performance while monitoring resource utilization using Grafana and Prometheus.
- Enhanced scalability and reliability by upgrading the customer migration workflow for 500+ customers using Node.js scripts and implementing testing and automation for easy deployment.

National Payments Corporation of India (NPCI)

May 2020 - March 2022

Senior Associate Developer

Hyderabad, India

- Facilitated the onboarding of 150 banks on the blockchain-based real-time Internet Banking platform Vajra using Bash scripts.
- Implemented Verification Transaction Logic (3 ACK) using Node.js on Vajra IMPS, increasing the success rate by 70%; integrated CBDC (Central Bank Digital Currency) with UPI; and designed transfer logic for CBDC using Typescript and Express.
- Accelerated all canary releases, as well as 6 mainline deployments, strengthened the system by adding performance optimization and caching strategies with RabbitMQ and Redis while executing CI/CD pipelines using GitLab CI and Jenkins.
- Optimized token generation and creation by 200% by implementing batch processing in the in-built file system of the Hyperledger Fabric blockchain framework using Golang and React.
- Deployed and managed a Kubernetes cluster and handled Docker and Kubernetes configurations for advanced UPI/IMPS fraud detection systems adhering to DevOps principles on Linux.

Kloudone Inc.

Jan - May 2020

Software Engineering Intern

Chennai, India

- Constructed Dockerfiles according to the dependencies to build images for various teams for an intra-cloud migration for 2 different organizations on platform-based technologies like GCP, Docker, and Kubernetes.

Projects

Interactive Chatbot and RAG - Document Analysis with Invoice Analysis 🤖 | Python, github

July 2024

- The primary objective of this project was to develop an interactive chatbot using Azure AI's Document Intelligence in real-time using Deepgram, Groq to analyze information from invoice images.

Live Streaming Application For Cricket 🏏 | Kafka, Airflow, Python, AWS EC2

March 2024

- Built a live streaming app, Winner's Circle Live, using Kafka for real-time streaming, AWS RDS and S3 for storage, Apache Airflow for orchestration, while performing Exploratory Data Analysis (EDA) using Pandas and Matplotlib.

Custom Work Stealing Algorithm 🤖 | Java, Multiprocessor, Threads,

March 2024

- This project implements and benchmarks two algorithms, the Custom Work Stealing Algorithm and ForkJoinPool. The implementation was all done in the Java programming language and it uses Gradle.

Real-Time Scheduling on Arduino Mega Using FreeRTOS and CentOS | Arduino, RTOS, CentOS, C/C++

March 2024

- Integrated and tested RMS, DMS, and EDF scheduling algorithms with deadline miss detection on FreeRTOS for Arduino Mega, achieving 99% accuracy in execution time.

Wildfire Detection using OpenCV 🤖 | OpenCV, Image processing

December 2023

- This project uses ResNet50 (a residual network) and CNN to classify an image into fire, neutral, and smoke using computer vision.

Classification of Retinal scans using Computer Vision | python, github, pytorch

October 2023

- Utilized retinal scan datasets from Kaggle to develop a robust computer vision model.

Education

Virginia Polytechnic Institute and State University

Aug. 2023 – May 2025

Master of Science in Computer Engineering, GPA : 3.8

USA

Technical Skills

Languages: C/C++, Java, JavaScript/TypeScript, Python, Golang, SQL/NoSQL, Bash

Database Tools: PostgreSQL, MySQL, MongoDB, Redis

Technologies/Frameworks: Angular, Node.js, Docker, Kubernetes, RabbitMQ, OpenCV, AWS, Hyperledger Fabric, React.js, HTML, CSS, RESTful APIs, Spring Boot, GitHub, Linux/Unix, SonarQube

Embedded Systems/Kits : Arduino Mega/Uno, Raspberry pi, MATLAB

Cloud Technologies : Azure, AWS, GCP