Roshini Sanikop

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Education

University of Massachusetts Amherst Sep 2024 - May 2026
Master's in Computer Science, GPA: 3.76/4.0

BMS Institute of Technology and Management Aug 2019 – Jun 2023
Bachelor's in Information Science, GPA: 3.6/4.0

Skills

Languages: Python, C++, HTML5, CSS, Shell Scripting, JavaScript, R, SQL, **Developer Tools:** Git, Docker, Nginx, MySQL, Elasticsearch, Oracle Cloud Infrastructure (OCI), AWS, SaltStack, Chef **Frameworks:** Flask, Django, PyTorch, Node.js

Relevant Coursework

Distributed & Operating Systems, Computer Networks & Security, Machine Learning, Neural Networks, Optimisation in Computer Science, Data Structures and Algorithms, Python, Big Data Analytics, Database Systems, Cryptography.

Experience

DevOps Consultant, Oracle Financial Services Software – Bengaluru, India Aug 2023 – Jul 2024

- Optimised system scalability by deploying JMS Modules in WebLogic, enabling asynchronous communication and reducing server startup latency by 90%.
- Spearheaded the implementation of OBCFPM and OBELCM solutions, cutting deployment time by 86% and accelerating system integration.
- Migrated from single-node WebLogic setups to a 9-node high-availability environment on Oracle Cloud Infrastructure (OCI), enhancing scalability and availability while coordinating across teams.
- Automated patching and environment setup using Bash scripts, reducing manual workload by 90% and significantly improving deployment efficiency.

Site Reliability Engineer, Intern, PhonePe – Bengaluru, India Feb 2023 – May 2023

- Engineered a Flask web application for On-call Roster management, leveraging Elasticsearch and Nginx for high availability, leading to a reduction of **30 hours in manual scheduling each month**.
- Implemented configuration management and monitoring for a multi-node setup using SaltStack, achieving a **40% reduction in manual setup time** and enhancing system reliability through automated monitoring processes.

Projects

Asterix and the Microservice Stock Bazaar ***GitHub Repository***

- Designed a lightweight stock trading simulator using custom thread pools and low-level socket programming in python. The monolithic server handled concurrent client requests with manual thread synchronization.
- Refactored into a microservices architecture with a front-end HTTP server and two back-end services (catalog and order), communicating via RESTful JSON APIs; emphasized concurrency, modularity, and performance to simulate real-time stock lookups and trades under load.

CarbonAdvisor ***GitHub Repository***

- Currently contributing to **CarbonAdvisor**, a project under Prof. Prashant Shenoy at the *Laboratory for Advanced System Software* (LASS), aimed at optimizing carbon efficiency in cloud computing.
- Developing energy-sensitive scheduling and resource management techniques to minimize the carbon footprint in data centers.

Mitigating bias in Facial Recognition using Seldonian Framework ***GitHub Repository***

- Implemented the Seldonian framework to enforce fairness-aware constraints in facial recognition systems, achieving a 95% compliance rate with fairness metrics while balancing accuracy and violation probabilities across demographics.
- Conducted a comprehensive comparative analysis of fairness-aware models (e.g., those enhanced with Seldonian constraints) and fairness-unaware models from PyTorch, such as ResNet50 and VGG16, showcasing the potential of integrating fairness considerations into state-of-the-art facial recognition systems.

Phishing Website Detection using ML and Django ***GitHub Repository***

- Developed a web application that leveraged a binary classification model which identified and classified URLs as either Phishing or Legitimate using **Natural Language Processing** (NLP) techniques and a dedicated dataset.
- Leveraged Django for robust backend development, handling URL routing, secure ML model integration, and efficient rendering of a responsive UI.