RUTURAJ RAMCHANDRA SHITOLE

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Education

Master of Science, Computer Science **Jan 2024 – Dec 2025**

The George Washington University

- GPA: 4.0
- Graduate Teaching Assistant, Computer Architecture (Spring'25) & Systems Programming (Fall'24).
- Researching energy efficiency of machine learning algorithms, eBPF, and high-performance benchmarking.
- Coursework: Research, Advanced Operating Systems, Distributed Systems, Algorithms, Cloud, DBMS

Bachelor of Engineering, Computer Science and Engineering **Aug 2016 – Sep 2020**

Bangalore University

- Grade: 72.17/100 (Distinction)

Work Experience

Software Engineer, Syncron **Jan 2022 – Dec 2023**

- As an integral part of Syncron.AI, worked with Data Scientists, Architects, & Engineers to upgrade the AI Infrastructure for Experimentation, Model Training, Inference, Monitoring, Governance, Deployment, & Feature Engineering, reducing the time between inception & delivery of ML Solutions by 60%.
- Developed online & offline multi-tenant Feature Store for supporting ML workflows, serving over 5 million features per tenant, reducing the run-time of ML Pipelines by 40%.
- Developed event-driven CI/CD pipelines using GitHub Actions & Triggermesh for provisioning artifacts for ML Pipeline Components in various environments, resulting in a 70% faster provisioning of ML Artifacts.
- Within two weeks, built an interactive Top-Down Price Optimization Application for performing constrained price optimization to achieve revenue & profit goals by analyzing customer data, performing mathematical operations, building & deploying application on Kubernetes, leading to a key customer win & bringing in millions in revenue.

Associate Software Engineer, Syncron **Jan 2021 – Dec 2021**

- Developed AI Infrastructure by analyzing proprietary solutions & developing vendor-agnostic architecture using Kubernetes resulting in 90% reduction in operation costs.
- Created Python Packages for interacting with Data Lake by analyzing the requirements of Data Scientists & MLOps Engineers, resulting in a streamlined experience in both performing Exploratory Data Analysis & developing scalable ML Pipelines thereby reducing development time by 20%.
- Developed Pipelines for performing Statistical & ML use cases like Price Volume Mix Analysis, Customer Segmentation, & Quotation Guidance, automatically generating analytical dashboards for client use and reducing the delivery time by over 60%.

Intern, Syncron **Jan 2020 – Dec 2020**

- Developed Business Intelligence (BI) platform administration tool for monitoring, alerting, and preventing cross-tenant access in a system of over 100 tenants and thousands of users per tenant.

Publications

eBPF-Based Intrusion Prevention System for Database Servers **June 2024**

IEEE Cloud Summit 2024

- Presented a kernel-based solution for securing database servers using eBPF to monitor all incoming packets at the network interface card level and using dynamically created access control rules to accept/drop packets. The resulting work was published in the 2024 IEEE Cloud Summit Journal.

Skills

Programming Languages: Python, Go, C, Rust, C++, SQL
Containerization and Orchestration: Docker, Kubernetes, Kubeflow, KNative, Istio, KServe, ArgoCD, Triggermesh, Helm
Observability: OpenTelemetry, ClickHouse, Grafana
Cloud: AWS (EKS, Lambda, Glue, S3, SageMaker, DynamoDB, APIGateway)
Machine Learning: MLFlow, Pandas, Numpy, Scikit-Learn, Keras, Tensorflow
Systems and Networking: Linux, eBPF, DPDK, REST, gRPC
Domain Expertise: MLOps, Systems, DataOps, Observability, Networking, Business Intelligence, Machine Learning,
Others: Terraform, Github Actions, K6, FastAPI, Serverless, Jupyter