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 & Fall'25).
- 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 and MLOps 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

Towards Sustainable Machine Learning with Serverless at the Edge   **June 2025**
IEEE Cloud Summit 2025
- Developed energy-aware framework for scheduling serverless machine learning workloads on the edge by researching the energy measurement metrics of different edge and cloud devices running ARM and x86 chips for serverless machine learning workloads. The resulting work was published in the 2025 IEEE Cloud Summit Journal.

eBPF-Based Intrusion Prevention System for Database Servers   **June 2024**
IEEE Cloud Summit 2024
- Developed 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++, Elixir, 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, PyTorch, 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, REPL, Tegrastats