
Technical Leader

Accomplished technology leader with a fourteen-year history of driving innovation across diverse industries. Possessing a robust technical foundation, I excel in architecting and delivering scalable software solutions leveraging microservices, machine learning, and advanced data structures.

SKILLS

Programming/Scripting Languages: Python, JavaScript, Bash, Cloud native development

Tools & Technology: Streamlit, Flask, FastAPI, Rest Api, Sockets Swagger,, Pandas, Numpy

Test Automation Framework: Behavior Driven Development (Behave)

Databases: MySQL, MongoDB, SQL, NoSQL, and Oracle, Chroma

ML Frameworks/Libraries: Scikit-Learn, TensorFlow, Matplotlib, NLP, BERT, LangChain, LLM, GenAI, prompt engineering

Cloud: Azure, AWS

Containerization/ Container Orchestration: Docker, Kubernetes

Distributed Computing Framework: PySpark

People Skills: Team Management, Project Management, Mentoring, Business liaison/ development, Strategic Planning, Leadership

MLOps: Model deployment to cloud, MLFlow, Prometheus, Grafana

PROFESSIONAL EXPERIENCE

ABC, NC

12/2024-till date

AI Consultant

Designed, evaluated and developed an advanced **agentic AI** solution using **Azure OpenAI, LangChain**, and a tool-based architecture for intelligent IT **stale devices automation**. Conducted in-depth cost-benefit analysis of LLM token usage, modeling the financial impact of architectural optimizations like **batch processing** and **caching**, resulting in a **95%+ cost reduction**. Developed a resilient, event-driven architecture with proactive error handling to mitigate the risks of non-deterministic systems and an exhaustive logging for audit ready implementation.

Babloo Motors, Raleigh, NC

09/2021-09/2024

Technical Lead - Artificial Intelligence

Engineered a service using **LangChain** and **LLMs** to interact with and gain insights from a **MySQL** database. The service, exposed as a **REST** endpoint through a **Flask** GUI, understands natural language, constructs accurate SQL queries, and presents results in human-readable format. Employed prompt engineering for crafting Chat prompts, built **custom chains**, and performed **LLM-assisted evaluation**.

Innovated with **machine learning** to design a **neural network** that **predicts** the optimal timing for OTA upgrades, leveraging vehicle usage data to significantly enhance financial efficacy and customer satisfaction by reducing notification disruptions by **75%**.

Developed a **regression model** to **predict** driver **risk scores**, enabling personalized insurance premiums and proactive safety interventions. This model contributed to **improved risk assessment accuracy**. Collaborated with safety experts to define risk levels aligned with industry standards. Designed and implemented an **ETL pipeline** using **PySpark** for efficient **batch processing**.

Designed and implemented a **Python-based Test Automation Framework** that **doubled testing efficiency**. This framework built on behave open source library simulated vehicle functional behavior, significantly reducing reliance on physical vehicles and accelerating the testing process.

Developed mock services utilizing Python, proto-buffers, and Gherkin-based feature files. These services effectively simulated vehicle behavior in virtual environments, eliminating the need for physical vehicles, and optimizing the testing process.

Instituted a rigorous code review process focused on adherence to PEP-8 Python coding standards and comprehensive code comments. This initiative resulted in a 20% reduction in defects, a 15% increase in development velocity, and a more maintainable, readable codebase. Detailed documentation further streamlined project execution and enhanced overall deliverable quality.

WSD, Peoria, IL

03/2020 - 09/2021

Senior Software Engineer

Engineered and deployed robust, **scalable ETL pipelines**, orchestrating the seamless ingestion of heterogeneous data sources into **Snowflake Data Warehouse**, demonstrating high-level expertise in data engineering.

Built a Python-driven ETL framework for the efficient transformation of No-SQL data (Azure Cosmos DB) into structured SQL data (**Snowflake**), employing Azure No-SQL Cosmos DB SDK and Snowflake SQL tables.

AAG, California

10/2019 - 01/2020

Senior Python Engineer - Field Ops

Engineered a Python Flask-based dashboard, providing near-real-time insights into Focal Systems' camera network health, leveraging a **microservices** architecture (Python-driven) for efficient data aggregation, alert generation, and seamless integration with **MongoDB**. This solution empowered field technicians to proactively address maintenance issues, optimizing camera uptime which contributed to a **2% reduction in operational costs**.

Lappu Systems, Edison

09/2018 - 09/2019

Senior Python Engineer- Machine Learning

Engineered AI-enabled software to classify clinical literature for Adverse Drug Events Reporting, markedly improving efficiency for medical safety officers. The classified clinical literature moved to **AWS S3** and then to subsequent infrequent storage as time progressed.

Implemented a Pharmacovigilance virtual assistant using **Python-Flask**, leveraging natural language processing and the **RASA NLP** framework, to enhance data analysts' efficiency and empower the non-technical workforce to derive insights from the data corpus.

Systems, India

01/2012 - 11/2015

Senior Software Engineer - Python

Engineered a Python-based BACnet testing framework, leveraging **Pytest** and BACnet stack libraries, to empower the QA team with automated testing and detailed result reporting. Framework streamlined device validation by enabling seamless property interactions, event monitoring, and comprehensive response analysis.

ADDITIONAL WORK EXPERIENCE

Maharashtra, India

03/2010 - 11/2011

Software Engineer

Robotics India Pvt.Ltd., India

05/2008 - 01/2010

Programmer

Certifications

AWS Certified Solution Architect - Associate | Amazon Web Services

Spark and Hadoop Developer | Udemy

AWS Machine Learning Specialty | Udemy

AWS Essentials | Udemy

AWS Machine Learning Model Deployment | Udemy

Education

Masters in Computer Science 2016-2018

Rochester Institute of Technology, New York

Diploma in Embedded Systems & Design 2007-2008

India, Hyderabad

Bachelors in Tech Electronics & Communication

UP Technical University, India, 2007