SAI SHRIYA SURLA

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SUMMARY

AI Native Software Engineer with 2+ years of experience specializing in backend systems, distributed data processing, and scalable service design. Experienced in building production-grade systems in Python with strong emphasis on performance, reliability, and correctness.

SKILLS

Programming Languages: Python (advanced), Java (working proficiency), JavaScript (ES6), SQL(advanced)
Backend & Software Engineering: REST API Design, Object-Oriented Design, Data Structures & Algorithms, Modular Architecture, Test-Driven Development (TDD), Code Reviews, System Design Fundamentals
Distributed Systems & Databases: Distributed Computing (Spark), Relational Databases, Schema Design, Query Optimization
Data Visualization & Reporting: Tableau, Reporting Datasets, Dimensional Modeling (Star/Snowflake), Kafka
Cloud & Infrastructure: AWS (S3), Distributed Data Storage, CI/CD Fundamentals, Kubernetes, Git
Data Engineering & Analytics: ETL/ELT Pipelines, Data Quality & Validation, Medallion Architecture, dbt, Large-Scale SQL Optimization
Certifications: Python for Data *Science**(IBM)*** , Data Scientist Master's Certificate ***(Simplilearn)***, AI Practioner ***(AWS)***

WORK EXPERIENCE

Temporal Dynamics – ***Software Engineer*** | Sunnyvale, California **July 2025 – Present**

• **Designed** and **implemented** scalable Python-based **Agentic AI** data processing services to transform semi-structured inputs from **1,000+ dynamic form** templates into standardized JSON schemas, improving processing **reliability to 95%+**
• **Architected** modular validation and normalization components with deterministic rule engines, **reducing manual post-processing** effort by **40%** and improving system maintainability.
• **Optimized storage** interactions and transformation workflows in **AWS S3**, Rigoursly trained LLMs with customized **prompt engineering** and **LangChain** framework.
• **Collaborated** cross-functionally to define schema contracts and enforce system-level validation logic for regulatory-critical workflows.

Sri Sathya Sai Institute – Backend Engineer Intern | Karnataka, India (Remote) **May 2025 – July 2025**

• **Developed** backend data processing modules in Python and SQL to handle **500K+ healthcare records**, improving processing throughput and reducing execution latency by **30–40%.**
• **Designed** scalable schema architectures and implemented automated validation layers to ensure **99%+ reporting consistency** across distributed datasets.
• **Optimized** complex query logic and indexing strategies within Snowflake, significantly reducing large-scale aggregation runtime for production workflows.

Al Tomouh IT LLC. - Testing Intern | Muscat, Oman **July 2023 – December 2023**

• **Engineered and executed** 58+ structured test cases for a large-scale e-municipality platform supporting **150+ online citizen services**, ensuring functional accuracy pre-launch
• **Validated and analyzed** system requirements in collaboration with developers and business analysts, identifying and documenting critical defects prior to production release
• **Improved release readiness** by producing detailed defect reports, root-cause documentation, and test summaries for stakeholder review

Apparel Group UAE - Software Developer Intern | Dubai, United Arab Emirates **June 2022 – August 2022**

• **Developed** and shipped frontend features for a large-scale e-commerce platform using JavaScript and React, improving user engagement across **100,000+ active users**.
• Collaborated with backend engineers and designers to integrate APIs and improve UI performance.

PROJECTS

Market Shock Digital Twin | Python, FastAPI, Kafka, TimescaleDB/ClickHouse, Redis, React|[GitHub]
-Built an event-driven market replay and portfolio simulation platform with **Kafka-backed time-warp playback (1x/10x/100x**) and REST APIs for scenario evaluation. **Implemented** idempotent ingestion, deduplication, and replay correctness checks; added Redis caching and query optimization for low-latency analytics reads.
-Deployed via Docker and instrumented with Prometheus; load-tested replay throughput and API p95 latency under concurrent users.

Music Recommendation System | Flask, Python, NLP, Pandas, sklearn, gensim, spacy ||[GitHub]
-Spearheaded development of a **Python**-based web application, leveraging **NLP libraries** to process and analyze a dataset of over **379,893** song lyrics from **79** genres, delivering personalized music recommendations.
-Enhanced user experience by designing a responsive front-end and executing efficient data preprocessing on a curated subset of **38,404** songs, utilizing **lemmatization** for accurate song matching and recommendation.
-Introduced a strategic pre-processing solution to bypass retraining of **LDA model** for each query, **reducing response time by 98.33%** and increasing efficiency in handling user requests.

Formula 1 Analytics Lakehouse| Python, PySpark, SQL, Delta Lake, Unity Catalog| [GitHub]
-Built a **scalable pipeline** for race analytics, implementing **concurrent API pulls** with **rate limiting** and **schema enforcement** to improve **data freshness** and cut end-to-end ingestion **latency** by **45%** using **Python**, **Databricks**, and **Delta Lake**.
-Engineered **Silver** and **Gold layers** to flatten nested race results into analytics-ready tables, applying **deduplication** to improve query performance by **~35%** and enable driver and constructor insights using **PySpark**, **Spark SQL**, **Delta Lake**, and **Unity Catalog.**

EDUCATION

Indiana University Bloomington | *Master of Science in Computer Science* ***December 2025***
Heriot Watt University Dubai, Scotland | *Bachelor of Science in Computer Science Hons. (AI)* ***May 2023***