

Sriya Smita Sahoo

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PROFESSIONAL SUMMARY

Software engineer with production experience building backend services, full-stack web applications, and AI-enabled systems, and an M.S. in Computer Science. Ships end to end: relational schema and REST API design, event-driven workflow automation, LLM agent and retrieval-augmented generation (RAG) pipelines, and React/Next.js frontends. Strong in Python, FastAPI, PostgreSQL, and TypeScript, with a record of translating ambiguous operational requirements into maintainable, tested software that non-technical users actually adopt.

EDUCATION

Indiana University Bloomington

Bloomington, IN

Master of Science in Computer Science. GPA: 3.67/4.0.

May 2026

Relevant Coursework: Applied Algorithms, Machine Learning, Computer Vision, Data Mining, Computer Networks, Distributed Systems, Cloud Computing

KL University

Vijayawada, India

Bachelor of Technology in Computer Science Engineering. GPA: 8.97/10.

May 2024

Relevant Coursework: Database Management Systems, Design & Analysis of Algorithms, Operating Systems, Object-Oriented Programming, Cybersecurity, Edge Computing

EXPERIENCE

Senior Consultant

Jun. 2026 – Present

Heartland Community Network

Indiana, U.S. (Remote)

- Map workflow bottlenecks, system dependencies, and integration trade-offs across 5 business processes, converting operational requirements into technical roadmaps for automation and data integration.
- Prototype automation and reporting solutions in Python and SQL to validate feasibility before engineering effort is committed, reducing downstream rework and scope churn.
- Drive requirements gathering, solution design, and technical documentation cross-functionally, aligning delivery priorities with business objectives and long-term system maintainability.

Inventory Data Analyst

Aug. 2025 – May 2026

Indiana University Dining

Bloomington, IN

- Engineered automated inventory-reporting and demand-trend pipelines across 5+ dining units, converting raw operational data into near-real-time insight that reduced overstock and improved restocking decisions.
- Rebuilt ETL pipelines to eliminate inconsistent manual reporting across 3+ workflows, standardizing data validation and cross-functional logging practices.
- Designed SQL-backed reporting for non-technical operators, prioritizing clarity to drive adoption without training overhead.
- Surfaced recurring demand patterns through scheduled reporting that informed purchasing and replenishment, replacing ad-hoc spreadsheet requests with a repeatable cycle.

Software Engineer

Jul. 2023 – Jul. 2024

Next Page Technologies

Hyderabad, India

- Owned 20+ modules of a production CRM platform used daily by a live client team, designing relational schemas and RESTful backend services powering lead management and sales workflows.
- Delivered backend endpoints end to end, from data-model design and API contract through unit-tested implementation and deployment, translating business requirements into maintainable application logic.
- Automated event-driven workflows including rule-based processing, multi-step approval flows, notifications, and validation, standardizing execution across the full CRM lifecycle.
- Implemented role-based, stage-aware access control (RBAC) across frontend and backend layers, enforcing consistent authorization for users at different stages of the sales pipeline.
- Resolved production defects reported directly by client users within active sprint cycles, delivering releases through sprint planning, peer code review, and Git-based version control.

Robotic Process Automation Intern

Jan. 2022 – May 2022

AICTE Edu Skills

Hyderabad, India

- Cut manual data-processing time by 25% across invoice and web-form workflows by building Python extraction and validation pipelines for repetitive operational tasks.
- Delivered 4 reusable automation solutions by applying object-oriented design patterns to modularize RPA components and improve maintainability across workflows.
- Integrated REST-based email notification and report-generation services to surface automation outcomes and exception cases to stakeholders without manual follow-up.

PROJECTS

NoteKit – Grounded RAG Learning Platform <https://github.com/sssahoo-lang/notekit>

Python, FastAPI, PostgreSQL, pgvector, Next.js

- Built an end-to-end retrieval-augmented generation (RAG) platform that turns web sources and user uploads into citation-backed study modules and auto-generated practice quizzes.
- Achieved 95.3% claim faithfulness and 16/16 correct refusals on a fixed evaluation benchmark by combining dense-vector retrieval (pgvector) with PostgreSQL full-text search through reciprocal-rank fusion and cross-encoder reranking.
- Reduced first-response latency by 65% (52s to 18s) and quiz-enabled course cost by 48% through concurrent async processing, server-sent events (SSE) streaming, and prompt caching.
- Designed ingestion, chunking, embedding, and retrieval as testable services for evaluation-driven iteration on retrieval quality.

RatePilot – Autonomous Bill Negotiation Agent

<https://github.com/sssahoo-lang/ratepilot-agent>

Python, FastAPI, React, LLM APIs, Gmail API

- Built a full-stack autonomous LLM agent that researches live competitor pricing through a web-search tool, formulates negotiation strategy, and generates personalized outreach with no manual input after upload.
- Designed stateful accept, counter, and escalate decision logic that selects each next action from negotiation context, prior correspondence, and retrieved pricing evidence, eliminating reliance on unsupported model assumptions.
- Integrated Gmail API monitoring for inbound replies and async PDF parsing with structured LLM extraction, backed by a React dashboard surfacing per-negotiation and monthly savings outcomes.
- Maintained a full audit trail of agent decisions, rationale, and state transitions, keeping autonomous behavior inspectable.

Distributed Graph Processing Engine

<https://github.com/sssahoo-lang/distributed-graph-benchmark>

Python, Apache Spark, GraphX, Scala, Docker, Distributed Systems

- Automated 300+ benchmark runs across PageRank and SSSP algorithms on 5M-edge Stanford SNAP datasets by deploying a distributed engine on a 5-node NSF Jetstream2 cluster with variable worker and partitioning configurations.
- Achieved a 3.3x speedup on large-graph workloads and quantified 25-400x Spark overhead on sub-RAM datasets by profiling task-scheduling bottlenecks (GC <2.5%, shuffle-wait <2.7%).
- Reduced cloud deployment wall-time by 31.7% by tuning Spark data-locality parameters, establishing a data-driven threshold for distributed vs. single-node deployment decisions.

Real-Time Edge AI Vision System <https://github.com/sssahoo-lang/edge-traffic-vision>

Python, YOLOv8, Raspberry Pi, OpenCV

- Improved on-device inference throughput by 40% with zero cloud dependency by building an edge-deployed vehicle-detection and speed-monitoring system on Raspberry Pi using YOLOv8, OpenCV, and multi-object tracking.
- Delivered sub-second inference on constrained hardware by optimizing frame-analysis workflows and integrating automated violation detection, alerting, and centralized logging.

SKILLS

Languages: Python, TypeScript, JavaScript, Java, SQL, C, C++, Scala, HTML/CSS, Bash

Backend: FastAPI, Flask, Django, Node.js, REST APIs, Microservices, Async/Concurrency, WebSockets, Pydantic, SQLAlchemy

AI/ML: LLM Applications, Agentic AI, RAG, Prompt Engineering, Vector Embeddings, Semantic Search, LangChain, LangGraph, Transformers, YOLOv8, OpenCV, PyTorch, TensorFlow, scikit-learn, pandas, NumPy

Frontend: React.js, Next.js, Vite, Responsive Design, State Management, Server-Sent Events (SSE)

Data & Databases: PostgreSQL, pgvector, MySQL, SQLite, Schema Design, Query Optimization, Full-Text Search, ETL & Data Pipelines, Apache Spark

Cloud & DevOps: AWS (EC2, S3), Azure, GCP, Docker, CI/CD, Git/GitHub, Linux/Unix, Monitoring & Logging

Practices: System Design, Object-Oriented Design, Data Structures & Algorithms, API Integration, Unit Testing (pytest), Agile/Scrum, Authentication & Authorization (OAuth2, JWT, RBAC), Technical Documentation

CERTIFICATIONS

- AWS Certified Solutions Architect – Associate
- AWS Certified Cloud Practitioner (CLF-C02)
- Microsoft Azure Fundamentals (AZ-900)
- Red Hat Certified Enterprise Application Developer
- Google Cloud Associate Cloud Engineer

PUBLICATION

- "Survey of Non-English Language Compilers: Exploring the Diversity of Programming Languages," 2023 9th International Conference on Advanced Computing and Communication Systems (ICACCS), Coimbatore, India, pp. 1187-1193.