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INTRO

I am a highly skilled software engineer with more than 3 years of professional experience in building scalable and performant systems. With a proven track record of architecting, building, and delivering software systems across a wide range of projects, I offer expertise in deeply understanding complex domains and their requirements and translating them into actionable plans and effective outcomes. I am also passionate about the open source community and actively participate in collaboration and publishing of software accessible to everyone. I am currently seeking new opportunities that will allow me to hone my technical skills in a creative and collaborative environment.

EXPERIENCE

RAFT.AI | SOFTWARE ENGINEER II

Nov 2022 – Present | London, United Kingdom (Remote)

AGENTIC WORKFLOW PLATFORM

Python • FastAPI • OpenAI • Agno • Langwatch • AG-UI

- Built and deployed various single-task agents and multi-agent workflows to execute dynamic business logic and orchestrate complex system interactions.
- Implemented reusable agents for generative and inference tasks to be plugged in to various deterministic and non-deterministic internal workflows.
- Implemented context-aware, session-persistent conversational agents to guide user interaction and produce dynamic, generative UI.

DECLARATIVE TEMPLATING ENGINE

FastAPI • Faststream • Pydantic • Agno • Aiven • Kafka

- Developed a configuration-driven engine to extract, transform, and validate data from multiple sources.
- Automated config generation with **LLM** agents, enabling dynamic template creation based on user intent and context.
- Declarative building-blocks to configure every step of data pipeline, chaining and cross-referencing data sources.
- Event driven template population architecture with **Kafka** and **Aiven** to allow least coupling for downstream systems.

QUOTES AND RATES MANAGEMENT PLATFORM

Python • FastAPI • PostgreSQL • Celery • SQLAlchemy • Docker • Kubernetes • Google Cloud Platform • Sentry • Grafana

- Built a generic platform for managing and aggregating cargo transport rates from various freight forwarders and suppliers, generating shipping quotations with detailed cost breakdowns and empowering major logistics companies like **Tollgroup** and **EmoTrans**.
- Utilized asynchronous **Celery** workers and streamed parallel parsing to speed up XML rates processing pipeline, massively improving memory usage from **8GB** to **300MB** (96%).
- Deployed using **Kubernetes** to **Google Cloud Platform** using **Helm** and **GitLab CI** and set up **Grafana** and **Sentry** for observability and monitoring.
- Achieved **80%** test coverage with end-to-end unit and integration testing.

WORKFLOW BUILDER FRAMEWORK

FastAPI • MongoDB • PostgreSQL • gRPC • React Flow

- Migrated the process of pushing shipments to various Transportation Management System (**TMS**) integrations into a centralized, template-driven node to easily customize outbound data stream.
- Simplified and templated the process of AP (Accounts Payable) Invoice charges reconciliation into a template-based generic node to manage updating payable charge costs and creating new records for additional accrued charges.

TATA CONSULTANCY SERVICES | SYSTEMS ENGINEER

Aug 2021 – Nov 2022 | Kolkata

Python • Flask • Celery • SQLAlchemy • Microsoft Azure

- Created a number of automation pipelines and cronjobs using **Python** and **Microsoft Task Scheduler** for system administration and statistical reports on server health.
- Created an interactive user management and admin portal for a **CMS** application backend using **Flask** and **SQLAlchemy** and hosted it on **Microsoft Azure** Virtual Machine.

SLEEKSKY LLC | PYTHON DEVELOPER (INTERNSHIP)

Jan 2021 – Apr 2021 | San Francisco, United States (Remote)

Python • FastAPI • PostgreSQL • MongoDB • Amazon AWS • Amazon RDS • AWS Lambda • GitHub Actions

- Developed the backend for a headless **CMS** platform used for building and publishing websites using **FastAPI**, **SQLAlchemy**, **PostgreSQL** and **MongoDB**.
- Deployed using **GitHub Actions** as **AWS Lambda** serverless functions.

OPEN SOURCE PROJECTS

ARREST | A DECLARATIVE HTTP CLIENT

Python • Pydantic • HTTPX • Github Actions • OpenAPI

A simple, type-safe HTTP client library with automatic schema validation using **Pydantic** that supports retries, exception handling and code generation from **OpenAPI** specification.

Deployed at Python Packaging Index(PyPI) at pypi.org/project/arrest.

github.com/s-bose/arrest

WANDERN | A CLI TOOL FOR DATABASE MIGRATION

Python • Pydantic • PostgreSQL • Sqlite • Typer

A simple CLI application written in **Typer** to create, apply and manage database migrations with versioned revision SQL scripts, and **LLM**-assisted revision generation from user prompt using **Pydantic AI**

Deployed at Python Packaging Index(PyPI) at pypi.org/project/wandern.

github.com/s-bose/wandern

SCHNELL | A SIMPLE HTTP SERVER IMPLEMENTED IN RUST

Rust • HTTP • Webserver • API

A single-threaded HTTP server implementation in **Rust** to handle incoming HTTP requests. It additionally offers declarative syntax for creating custom routes and route handlers and builders for creating custom HTTP responses.

github.com/s-bose/schnell

EDUCATION

UNIVERSITY OF CALCUTTA | MASTER OF COMPUTER APPLICATIONS (MCA)

Aug 2021 | Kolkata, WB

Worked on brain MRI image segmentation and implemented U-Net CNN architecture using **TensorFlow** and achieved **70%** accuracy on BraTS 2020 dataset as part of my final year thesis.

UNIVERSITY OF CALCUTTA | B.Sc IN COMPUTER SCIENCE

June 2018 | Kolkata, WB

SKILLS

Programming

Python • C++ • JavaScript • TypeScript

Libraries & Frameworks

FastAPI • Flask • React.js • Faststream • SQLAlchemy • Agno • Pydantic AI • Kafka

Databases

PostgreSQL • MongoDB • Elasticsearch • Redis

DevOps and other tools

Docker • Kubernetes • Google Cloud Platform (GCP) • Github Actions • Gitlab CI • Grafana • Sentry • Datadog • Terraform • ArgoCD

CERTIFICATES

Getting Started with AWS Machine Learning

🌟 [Coursera](#) • Certificate ID: TWBDKHUHJ7UN

Programming in C/C++

🌟 [University of Groningen](#)

Deep Learning with PyTorch

🌟 [Jovian](#) • Certificate ID: MFQWCYJSGM