Curriculum Vitae

Siddharth Singh

Skill Summary

As an experienced Software Engineer, I specialize in Python, GCP, GEN AI and Machine Learning, with a strong focus on building scalable systems that integrate structured and unstructured data to enhance decision-making. My recent work involves designing and implementing solutions using frameworks like LangChain, LlamaIndex, and GraphRag, including developing multi-modal retrieval systems, vector-based search engines, and custom LLM-driven applications.

Technical Skills

Category	Details
Operating Systems	Linux, Windows
Programming Languages	Python
Databases	MySQL, PostgreSQL, BigQuery, AlloyDB, VectorDB, GraphDB
Communication & Networks	HTTP, HTTPS
Frameworks & Libraries	Flask, Fast API, KubeFlow, Mlflow, Mlrun, GCP Vertex AI, Ray on Vertex AI, Cloud Build, Cloud Function, RAG, LangChain, LlamaIndex, Crewai, Autogen, GraphRag, Hugging Face, Groq, Ollama, LangFlow
Methodologies & Tools	Docker, Kubernetes, AWS Lambda, API Gateway, Jupyter Notebooks, RESTful APIs, JIRA, Postman

Working Experience

Data Exploration and Q&A with LLM

Details	Description
Duration	February 2024 – April 2024
Project Description	Developed a web-based application enabling natural language interaction with SQL databases, simplifying Exploratory Data Analysis (EDA) and Q&A for non-technical users.
Key Features	- Auto-generates visual summaries using LIDA. - Translates natural language to SQL for data retrieval and concise answers.

Project Technology	Streamlit, LIDA, LLMs, MySQL, PostgreSQL, Matplotlib, Pandas
Position	Software Engineer
Responsibilities	- Designed and implemented a natural language-to-SQL pipeline using LLMs for accurate query generation. - Integrated LIDA for automated data visualization. - Developed a Streamlit-based UI for data exploration and interaction. - Ensured compatibility with MySQL and PostgreSQL. - Automated data summarization and visual insights. - Conducted extensive testing for accuracy and reliability.

Vertex AI MLOps

Details	Description
Duration	May 2024 – July 2024
Project Description	Developed a robust MLOps solution using Google Cloud Vertex AI to orchestrate end-to-end machine learning workflows. Integrated data processing and model serving pipelines for seamless deployment and continuous delivery.
Key Features	- Data Pipeline: Integrated Google Cloud Feature Store with BigQuery. - Model Pipeline: Handled training, evaluation, and deployment using Vertex AI services. - Automation: Used GitHub Actions and Cloud Build for automation; implemented monitoring tasks.
Project Technology	Vertex AI, Google Cloud, Terraform, GitHub Actions, Cloud Build, Vertex AI Pipelines, Ray, Kubeflow
Position	Software Engineer
Responsibilities	- Orchestrated end-to-end ML workflows using Vertex AI and GitHub Actions. - Developed data and model pipelines. - Used Terraform for infrastructure provisioning. - Implemented training, evaluation, and deployment workflows. - Set up continuous monitoring for model drift.

Custom Image Generation

Details	Description
Duration	August 2024 – October 2024
Project Description	Developed a custom image generation solution for tailored visual content in industries like fashion and product design. Generates and retrieves images based on natural language descriptions.
Key Features	- Image Retrieval: Used LangChain-powered embeddings in a vector database. - Image Generation: Leveraged ControlNet for customization. - Developed React-based UI with MUI for simplified user experience.
Project Technology	Flask, LangChain, ControlNet, React, MUI, RAG, Python, Vector Databases
Position	Software Engineer
Responsibilities	- Designed a two-stage pipeline for image retrieval and generation. - Utilized LangChain for precise image retrieval. - Integrated ControlNet for image customization. - Developed backend APIs using Flask. - Ensured system adaptability for various industries.