AARSHIKA SINGH

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EXPERIENCE

Nomura International Plc, London, United Kingdom - *Financial Services*   **Oct. 2022 - Present**
Senior Software Developer, Associate: Global Markets IT Team (Trade Processing)

- Designed and implemented automation tools to streamline and enhance the software release process, reducing deployment time and minimizing human error.
- Spearheaded a proof-of-concept to refactor monolithic codebases into microservices, utilizing Apache Pulsar for efficient data streaming and Kubernetes with Helm for scalable deployment on Rancher.
- Implemented an automated database schema management system using Liquibase, improving efficiency in schema versioning and database migrations.
- Initiated and currently developing an intelligent log analysis system integrating Grafana logs from EKS with machine learning clustering to identify log patterns, support predictive diagnostics, and reference past resolutions.

EDUCATION

Jacobs University Bremen, Bremen, Germany   **Sept. 2019 – Jun. 2022**
Bachelor of Science, Computer Science

- **Study Minor:** Global Economics Management.
- **GPA:** 1.83 (German scale).
- **Relevant courses:** Algorithms and Data Structures, Software Engineering, Operating Systems, Robotics, Microeconomics, Macroeconomics, Developmental and Environmental Economics.
- **Awards:** Lürssen Werft GmbH Scholarship (€15,000 per year).
- **Thesis:** Assessing the performance of Quantum Kernel Machine Learning.

PROJECTS

Trade Day Clustering Using K-Means and Stock Data
Personal Project | Python, Pandas, Scikit-learn, yfinance, Streamlit   **May 2025**

- Developed an unsupervised learning model to cluster trading days based on price movements and volume patterns using K-Means.
- Engineered features from historical stock data to uncover hidden market day patterns and visualized with Streamlit.
- Project goal: showcase practical data science skills in feature engineering, clustering, and UI development for finance-related insights.

Movie Review Sentiment Analysis Using TMDB API
Personal Project | Python, Pandas, NLTK, Matplotlib, TMDB API   **Apr. 2025**

- Developed a data pipeline to fetch movie reviews using the TMDB API and perform real-time sentiment analysis.
- Preprocessed text data using NLP techniques and conducted sentiment classification using rule-based ML based models.
- Designed an interactive UI to allow users to input movie names or IDs and visualize sentiment breakdown and review clusters.
- Project goal: demonstrate skills in data wrangling, API integration, EDA, and stakeholder-friendly data storytelling.

Domain-Specific Chatbot Using ChatGPT API   **July 2025**
Personal Project | Python, OpenAI API, GitHub, Streamlit

- Developed a chatbot by fine-tuning an LLM on custom data for accurate domain-specific question answering, using retrieval augmented generation & agent orchestration
- Integrated with the ChatGPT API via GitHub to manage prompts, responses, and version control.
- Designed a lightweight interactive UI, enabling real-time query handling and context-aware responses.
- Project goal: demonstrate skills in LLM fine-tuning, API integration, and applied NLP.

SKILLS AND ACHIEVEMENTS

- **Programming Languages and Databases:** Java, C/C++, Python, SQL, JavaScript, MySQL.
- **Cloud & DevOps:** Kubernetes, Helm, Rancher, Liquibase.
- **Project Management & Collaboration:** JIRA, Confluence, Miro.
- **AI & Machine Learning:** Scikit-learn, TensorFlow, AI-driven testing, Advanced web research and information retrieval.
- **Languages:** English (Native), Hindi (Native), German (Intermediate).