SHASHANK SHEKHAR SINGH

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[](https://linkedin.com/in/rishav321) [linkedin.com/rishav321](https://linkedin.com/in/rishav321) [Portfolio](https://rishavkumar1951.github.io/portfolio/) [shashankss2109 [](https://leetcode.com/u/rishav1951/) [Leetcode](https://leetcode.com/u/rishav1951/)](https://github.com/rishavkumar1951)

# PROFILE SUMMARY

Innovative Software Engineer with **3+ years** at TCS. Possessing robust, self-cultivated expertise in **Machine Learning, Deep Learning, Natural Language Processing, Data Analysis, and Visualization**, reinforced by multiple real-world projects and proficiency in Python, AWS Cloud, and SQL. Committed to architecting intelligent, scalable solutions, blending engineering acumen with a relentless passion for AI innovation.

# TECHNICAL SKILLS

**Programming Languages/Database**: Python, Java, C++, MySQL, MongoDB

**Libraries**: Pandas, Numpy, Scikit-Learn, TensorFlow, Keras, PyTorch, Matplotlib, Seaborn

**Data Analysis**: Hypothesis Testing, Probability, Regression Analysis, PowerBi, Tableau, Excel

**NLP**: SpaCy, NLTK, Text Preprocessing, Feature Representation, Sequence Modeling, BERT, GPT

**MLOps/Cloud**: Docker, AWS Services(S3, ECR, Lambda, EC2, Code Deploy), MlFlow, Git, CI-CD Pipeline

**Machine Learning**: Linear and Logistics Regression KNN, SVM, PCA, K-Means, DBSCAN, Dimensionality Reduction

**Deep Learning**: Neural Networks, CNN, RNN, Transformers, Transfer Learning

**Generative AI**: Langchain, LLMs, Hugging Face, AI Agent, GANs, RAG

# EXPERIENCE

[**TATA Consultancy Services Ltd.(TCS)**](https://www.tcs.com/) **June 2022 – Current**

*Machine Learning Engineer, 3+ Years*

* Developed a java application using struts framework for **automated daily PDF contract note** generation from transactional data, facilitating scheduled email distribution and significantly enhancing client communication.
* Conducted quantitative analysis on capital market data using **SQL and Python (Pandas/NumPy)**, generating actionable insights that **optimized wealth management strategies.** Automated reports building, reducued manual effort upto **90%**.
* Engineered scalable, cross-platform automation solutions (Python/SQLAlchemy, Linux, VBScript) to streamline **ETL** processes, database management, and system integrations, concurrently providing **L2/L3** production support for continuous operational uptime.

# PROJECTS

[**Smart PDF Assistant with Google Gemini Pro**](https://github.com/rishavkumar1951/Smart-PDF-Assistant-with-Google-Gemini-Pro)*| Gemini Pro, FAISS, Streamlit |* [**GitHub**](https://github.com/rishavkumar1951/Smart-PDF-Assistant-with-Google-Gemini-Pro) **June 2025**

* Developed an **AI-driven PDF chatbot** using Google Gemini Pro for conversational AI, enabling detailed question-answering based on document content.
* Implemented advanced text processing and embedding techniques, including recursive character text splitter and **Google Generative AI embeddings**, to handle large volumes of PDF data for accurate and context-aware responses.
* Utilized FAISS for efficient text retrieval, integrating it with the chatbot to quickly search and retrieve relevant information from processed PDFs, and designed a user-friendly Streamlit application for real-time interaction.

[**FinanceGPT - RAG-Based Financial Analysis System**](https://github.com/rishavkumar1951/FinanceGPT---RAG-Based-Financial-Analysis-System)*| Bert, TF-IDF, LLM, |* [**GitHub**](https://github.com/rishavkumar1951/FinanceGPT---RAG-Based-Financial-Analysis-System) **May 2025**

* Devised an RAG-based LLM chatbot to analyze financial reports and forecast Indian market trends from daily news.
* Utilized advanced NLP for financial metric extraction and developed a system for document table alignment, boosting data comprehension and contextual accuracy.
* Utilized 2023 NIFTY 50 data for analysis, ensuring daily news and report updates for the chatbot.
* Optimized system performance by integrating Information Retrieval, NLP, RAG, LLMs, vector embedding and database.

[**YouTube Comments Sentiment Analysis**](https://github.com/rishavkumar1951/yt-comment-sentiment-analysis)*| LightGBM, AWS, API, Flask |* **Video Demo** *|* [**GitHub**](https://github.com/rishavkumar1951/yt-comment-sentiment-analysis) **March 2025**

* Engineered an end-to-end MLOps pipeline for YouTube sentiment analysis, boosting model accuracy from 0.658 to 0.92.
* Leveraged DVC/S3 for data/model versioning and MLflow for experiment tracking/registry in ML lifecycle.
* Containerized deployed models on AWS (DockerECR); established CICD with GitHub ActionsCodeDeploy.
* Scaled production and automated retraining using AWS (ASG,Load Balancer,CI/CD), cutting deployment time by 50%.

# EDUCATION

**Dronacharya Group Of Institution Aug 2018 – July 2022** *Bachelor of Technology in Computer Science Engineering CGPA: 8.1/10 Noida, Uttar Pradesh* **CERTIFICATION**

* Building Gen AI App 12+ Hands-on Projects with Gemini Pro [](https://drive.google.com/file/d/1VUiIKhF2vMr8RgoEyastQwor5P3Yvi70/view?usp=drive_link) - Udemy — June 2025
* Complete Generative AI Course With Langchain and Huggingface [](https://drive.google.com/file/d/1taFxD6XFsS4nTmkB3iyBGNO6L4Uh84V4/view?usp=drive_link) - Udemy — June 2025
* Data Science Masters Certification Program [](https://drive.google.com/file/d/1foiv9S5FC1wZDYs4LcjgwcqmLhMa59TA/view?usp=drive_link) - PwSkills — July 2024
* The Complete Python Bootcamp From Zero to Hero in Python [](https://drive.google.com/file/d/1SiYO4D8ODXcHh4nvvFSXPI-VurUL2_qI/view?usp=drive_link) - Udemy — May 2021
* Mastering Data Structures and Algorithms [](https://drive.google.com/file/d/1UhY1-U8CFWRfSyuYhyAe-SgQWxb_ItVo/view?usp=drive_link) - Udemy — Sep 2020