

# SHASHANK SHEKHAR SINGH

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## 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), MIFlow, 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)

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, reduced 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 / Gemini Pro, FAISS, Streamlit / GitHub

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 / Bert, TF-IDF, LLM, / GitHub

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 / LightGBM, AWS, API, Flask / Video Demo / GitHub

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 (Docker/ECR); established CICD with GitHub Actions/CodeDeploy.
- 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 📄 - Udemy — June 2025
- Complete Generative AI Course With Langchain and Huggingface 📄 - Udemy — June 2025
- Data Science Masters Certification Program 📄 - PwSkills — July 2024
- The Complete Python Bootcamp From Zero to Hero in Python 📄 - Udemy — May 2021
- Mastering Data Structures and Algorithms 📄 - Udemy — Sep 2020