

# Shivam Rana

Machine Learning Engineer

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## ABOUT ME

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Software Engineer specializing in backend development and AI-driven systems, with hands-on experience building scalable APIs, real-time computer vision pipelines, and RAG-based services. Skilled in Python, Java, FastAPI, Docker, and AWS. Confident, adaptable, and quick to learn new technologies in fast-paced environments.

## PROGRAMMING SKILLS

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**Languages:** Python, Java, SQL

**Web Technologies:** Javascript, HTML, CSS

**Data Analysis:** Pandas, NumPy, Matplotlib, Seaborn, Excel, Tableau, Power BI

**Machine Learning:** Scikit-learn, TensorFlow, Keras, Deep Learning, NLP, Computer Vision, YOLOv8, LangChain, RAG

**Cloud Platforms:** AWS SageMaker, Amazon EC2, Google Cloud Platform

**Model Deployment:** Flask, FastAPI, Streamlit, Docker

**Tools:** Git, GitHub, Postman, Linux, Jupyter, VS Code, Jira, Slack

## EXPERIENCE

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- **Alexion Techno Pvt. Ltd.** Noida, India  
*Machine Learning Engineer* Apr 2025 - Present
  - Built and maintained production-grade RAG services integrating OCR, table extraction, vector embeddings, and LangChain, reducing response latency by 30% and improving retrieval accuracy.
  - Developed real-time face recognition and YOLOv8-based traffic analytics pipelines with optimized preprocessing and inference, sustaining 25 FPS on edge hardware.
  - **Technologies:** Python, FastAPI, Docker, LangChain, OpenCV, TensorFlow/Keras, YOLOv8, AWS (EC2, SageMaker), GCP
- **Alexion Techno Pvt. Ltd.** Noida, India  
*Machine Learning Engineer Intern* Sep 2024 - Mar 2025
  - Performed EDA, feature engineering, and predictive model development (Logistic Regression, Random Forest, XGBoost), achieving up to 15% accuracy improvement after hyperparameter tuning.
  - Created analytical dashboards and ML evaluation reports, and contributed to early prototypes of churn prediction and recommendation systems showcased internally.
  - **Technologies:** Python, Pandas, NumPy, Matplotlib, Scikit-learn, Seaborn, Jupyter, Excel, Docker, IIS
- **Devtown** Remote, India  
*Data Science Intern* Apr 2024 - July 2024
  - Built customer churn prediction and recommendation models, contributing to a 40% reduction in predicted churn and improved engagement metrics.
  - Executed end-to-end ML pipelines involving feature engineering, SMOTE, feature importance, model calibration, and ensemble tuning; translated business needs into measurable KPIs and delivered analytical reports.
  - **Technologies:** Python, Scikit-learn, Pandas, NumPy, Jupyter, Matplotlib, Seaborn, SQL

## PROJECTS

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- **Document Retrieval & Q&A Engine** Python, LangChain, FastAPI, OpenCV, FAISS, Docker, IIS  
*RAG-based document intelligence system* Sep 2025 - Oct 2025
  - Implemented a RAG pipeline with OCR, table extraction, vector embeddings, and FAISS-based semantic search for accurate document responses.
  - Built a FastAPI microservice with prompt templates, conversational memory, caching, and deployed on IIS using reverse proxy & app-pool configuration.
- **Real-time Traffic Surveillance System** Python, NumPy, YOLOv8, OpenCV, Torch, Docker, IIS  
*Live vehicle & pedestrian detection pipeline* February 2025 - March 2025
  - Trained and optimized a YOLOv8 model with custom augmentation, threshold tuning, and post-processing for robust detection under varying conditions.
  - Engineered a high-FPS inference pipeline, containerized and deployed it on IIS server as a production service, exposed standardized API endpoints, and integrated them into the main project workflow.

## EDUCATION

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**Bachelor of Technology in Computer Science and Engineering** Aug. 2020 – April. 2024  
Lovely Professional University CGPA: 7.62

**Relevant Coursework:** Object Oriented Programming (OOPs), Operating Systems (OS), Data Structures and Algorithms (DSA), Database Management Systems (DBMS), Computer Networks, Distributed Systems, Cloud Computing, Data Analytics, Machine Learning, Deep Learning

## CERTIFICATIONS

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- Foundations: Data, Data Everywhere (Google) (Certificate)
- IBM Cloud Essentials (IBM) (Certificate)
- Data Structures & Algorithms (GeekforGeeks) (Certificate)
- Database Management System (Infosys Springboard) (Certificate)
- Cloud Computing on AWS (Udemy) (Certificate)

## POSITIONS OF RESPONSIBILITY

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- **Co-Founder and Technical Lead** Jalandhar, Punjab  
*TWB Technologies LLP* May 2023 - Feb 2024
  - Directed technical operations, client communication, and project delivery—overseeing architecture decisions, timelines, and demonstrations for multiple pilots.
  - Mentored developers and streamlined development workflows, improving collaboration efficiency and overall delivery speed.
- **Student Co-ordinator (Entrepreneurship Society)** LPU, Punjab  
*Innovation Igniters* Dec 2022 - Oct 2024
  - Coordinated and managed multiple tech-focused competitions and innovation challenges, engaging 200+ participants across campus.
  - Led the design team to produce 15+ creatives/posters, supporting promotional campaigns and event visibility.