

TARUN SINGH

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Education

Maharaja Surajmal Institute of Technology, GGSIPU 2020 – 2024
Bachelor of Technology(B.Tech) in Electronics & Communications Engineering 9.0 CGPA

AISSCE 2019 – 2020
CBSE

Skills

- **Programming & Tools:** Python, SQL, Excel, Power BI, Tableau, Pandas, Flask.
- **Data Analyst:** EDA, Statistical Analysis, Data Cleaning, Data Visualization, Hypothesis Testing
- **Machine Learning:** Scikit-learn, Linear/Logistic Regression XGBoost, Random Forest, Deep learning, Model Evaluation, Feature Engineering
- **Generative AI:** NLP, LLMs, RAG, TensorFlow, PyTorch, Fine-tuning(QLoRA), Model Quantization, Transformers, Langchain, Hugging Face, Vector DB, Prompt Eng.
- **Soft Skills:** Communication, Teamwork, Problem solving, Adaptability.

Experience

GenX eSolutions | AI/ML Developer Sep 2024
Project | Advanced Conversational AI System

- Developed a conversational chatbot leveraging both **serverless LLMs (Claude Sonnet 3)** and custom **fine-tuned (QLoRA)** and **quantized LLMs**, enabling seamless flight and hotel booking, which resulted in a **20%** increase in user engagement across integrated platforms.
- Developed a scalable and multi-user **Flask API**, integrating **AWS Bedrock** and **GCP Speech-to-Text API**, reducing latency by **40%** and optimizing performance for large-scale user interactions

Octel Networks Pvt Ltd | Data Scientist Oct 2023 - Aug 2024
Project | CyberSecurity Model

- **Data Analyst** - Conducted **Exploratory Data Analysis (EDA)** on network traffic data using **Excel, SQL**, and **Python**, Applied **statistical methods** including **hypothesis testing, t-tests**, and **correlation analysis** to uncover potential vulnerabilities for downstream ML modeling.
- Created dynamic dashboards in **Power BI** and **Tableau** to visualize vulnerabilities, and protocols for reporting.
- **Machine Learning** - Anomaly Detection,Flag the abnormal patterns using **Isolation Forest, One-Class SVM**, and **Autoencoders**.
- **Threat Classification** - Classify the Attack category using **XGBoostClassifier** and **RandomForestClassifier** achieve **70%** accuracy and perform hyperparameter tuning via **GridSearchCV** to increase performance by **15%**
- **Achieve-** Evaluate the performance using different performance metrics (**accuracy, f1, recall, precision**) and achieve the overall **85%** of accuracy

Projects

DoChat | RAG, Langchain, Hugging Face,LLaMA, Pinecone, Github

- Developed a **Conversational AI** system based on **RAG**, capable of handling large PDFs as data source and Utilize own custom **Fine Tuned(QLoRA)** and **Quantized LLaMA-2b** model hosted on **Hugging Face** for responses.
- Developed a real-time **semantic search pipeline** with sentence embeddings and **vector databases (Pinecone, ChromaDB)**.
- Designed a **prompt engineering pipeline** using **LangChain** to combine user queries with retrieved content for effective LLM inputs.
- **Achieved:** **40%** improvement in response relevance through enhanced semantic retrieval and prompt optimization and use **fine-tuned LLM**.

Student Performance Insight | MLops, Flask, CI/CD, AWS Github

- Developed and deployed an end-to-end **MLOps pipeline** for student performance prediction, utilizing models like **Linear Regression, XGBRegressor, K-Neighbors Regressor, and Decision Tree**.
- Built a **Flask API** for model interaction, deployed the project on **AWS**, and automated the deployment with **CI/CD pipeline** using GitHub Actions.