

Karan Pratap Singh

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PROFESSIONAL SUMMARY

Aspiring **Data Scientist** and **Fintech Enthusiast** with a strong foundation in **Machine Learning**, **Computer Vision**, and **Financial Modeling**. Proficient in building data-driven solutions using **Python**, **SQL**, and **Scikit-learn**. Experienced in developing **AI-powered applications** and **Predictive Models** to uncover actionable insights. Passionate about leveraging technology to solve complex financial problems and optimize business decision-making.

TECHNICAL SKILLS

- **Languages & Databases:** Python, SQL, Java, C++, C
- **Data Science & ML:** Scikit-learn, Pandas, NumPy, YOLO, OpenCV, Prophet, Random Forest, EDA
- **Data Visualization:** Tableau, Power BI, Matplotlib, Seaborn, Google Data Analytics
- **Web & Tools:** Streamlit, AWS, Git/GitHub, Jupyter Notebooks
- **Domain Knowledge:** Financial Analysis, Quantitative Modeling, Risk Assessment, Stock Market Analysis

KEY PROJECTS

- **Aether Eye – AI Powered Object Detection** | Python, YOLO, OpenCV, PyTorch, Generative AI (Llama 3, Groq), ESP32, Speech Processing (Vosk, EdgeTTS)
 - Developed a high-performance **Computer Vision system** capable of real-time object detection using the **YOLO architecture**.
 - Optimized the model for **Real-time Inference**, achieving high accuracy and reduced latency for live video feeds.
 - Curated and preprocessed a custom dataset to train the model, utilizing **Data Augmentation** techniques to improve robustness.
 - Deployed the solution using **OpenCV**, enabling seamless integration with monitoring systems.
- **CardSentinel – Credit Card Fraud Detection System** | Python, Streamlit, Scikit-learn
 - Engineered a **Machine Learning pipeline** using **Logistic Regression** to detect fraudulent financial transactions.
 - Performed comprehensive **Data Preprocessing**, including normalization and handling imbalanced data (**SMOTE**).
 - Achieved a **Precision/Recall score of 92%** (est.) by optimizing hyperparameters and feature selection.
 - Deployed an interactive web interface using **Streamlit** for real-time transaction classification.
- **S&P 500 Stock Price Prediction** | Python, yfinance, Random Forest
 - Developed a **Financial Forecasting model** to predict S&P 500 closing prices using historical market data.
 - Implemented **Linear Regression** and **Random Forest Regressor** algorithms, utilizing **yfinance** API for real-time data fetching.
 - Conducted **Backtesting** on 5 years of historical data to validate model performance against actual market trends.
 - Visualized **Market Trends** and prediction confidence intervals using **Matplotlib**.

EXPERIENCE

Head of Technical Design & Development – PSIT Sports Club

2024 – 2025

- Led the end-to-end **Full Stack Development** of a web platform for event registration and results tracking.
- Managed a database of **500+** student records and optimized the user journey through **Data-Driven Design**.
- Analyzed user engagement metrics to improve digital campaign reach by **20%**.

EDUCATION

Pranveer Singh Institute of Technology, Kanpur

2023 – 2027

B.Tech in Information Technology | CGPA: 7.0/10

Mother Teresa Mission Higher Secondary School

12th Grade (Intermediate)

Completed

Percentage: 70%

10th Grade (High School)

Percentage: 91%

CERTIFICATIONS

- **Google Data Analytics Professional Certificate** – Google
- **How Software Ate Finance** – Stanford University (Coursera)
- **Financial Markets** – Yale University (Coursera)
- **ICPC Asia Kanpur** Preliminary Contestant (Competitive Programming)