

AEKANK PATEL

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Education

Stevens Institute of Technology

Hoboken, NJ

Master of Science in Data Science, GPA: 3.97/4.0

Aug 2024 – May 2026

Relevant Coursework: Numerical Linear Algebra for Big Data, Deep Learning, Applied Machine Learning, Statistical Methods, Big Data Technologies, Time Series Analysis I, Intro to Bloomberg LSEG, and Capital IQ

Manipal Institute of Technology

Manipal, India

Bachelor of Technology in Mechatronics Engineering, GPA: 7.83/10

Oct 2020 – Jul 2024

Relevant Coursework: Data Structures and Algorithms, Machine Vision and Image Processing, IIoT Lab, Technology for Finance

Skills

Programming: Python, R, C, SQL

Machine Learning: Classification, Regression, Clustering, Anomaly Detection, Feature Engineering, Model Evaluation, Hyperparameter Tuning, Ensemble Learning, Explainable AI

Deep Learning & AI: CNN, RNN, Transfer Learning, NLP, LLMs, Computer Vision

Libraries & Frameworks: Scikit-learn, TensorFlow, Keras, PyTorch, XGBoost, NumPy, Pandas, OpenCV, Seaborn, Matplotlib

Big Data: Apache Spark, Hadoop, YARN

Mathematics: Linear Algebra, Probability, Statistics, Optimization, Calculus, Time Series

Tools: Flask, Streamlit, REST APIs, Git, Tableau, Power BI, MATLAB

Experience

Stevens Institute of Technology

Hoboken, NJ

Graduate Teaching Assistant

Sep 2025 – May 2026

- Evaluated mathematical proofs and Python based assignments for 100+ graduate students across Linear Algebra, Probability Theory, and Foundational Mathematics.
- Identified recurring conceptual errors in QR/SVD/Cholesky decompositions, eigenvalue analysis, optimization, probability, multivariate calculus and statistical modeling, standardizing grading criteria to ensure technical accuracy across sections.

Matrix ComSec Pvt. Ltd.

Vadodara, India

Research and Development Intern

Jan 2024 – May 2024

- Built a real-time fall detection pipeline using a hybrid CNN–MediaPipe architecture, achieving 91.39% test accuracy in multi-person video streams.
- Modified CNN-MediaPipe with YOLOv5 multi-person detection, increasing the system's robustness; personally annotated 100,000+ images to improve model accuracy in fall detection.

Projects

Oil and Airline Stocks: An Empirical Study Using Bloomberg Data [Medium]

Nov 2025 – Dec 2025

- Increased regression model explanatory power to 25–33% Adj. R^2 by isolating oil price sensitivity through SPX market adjustment and multi-factor modeling.
- Performed multi-factor regression analysis on crude oil (CL1) and airline stocks (DAL, AAL, UAL) using Bloomberg data.

FinRAG - Financial Document Intelligence System [Live Demo]

Jun 2025 – Aug 2025

- Constructed a RAG pipeline over 25+ financial documents using HuggingFace embeddings, vector similarity search, and Groq LLaMA for finance document question answering.
- Obtained 80% retrieval accuracy through metadata filtering, prompt optimization, and confidence scoring; deployed the application on Streamlit Cloud.

FRAUDGEN: Unmasking Fraud with Real-Time Explanations [Live Demo]

Mar 2025 – May 2025

- Achieved 96.55% recall and 0.9995 AUC in fraud detection by training an XGBoost model with engineered risk features and rule-based escalation logic.
- Built a real-time fraud detection system integrating IP geolocation and VPN detection, exposing model predictions through an interactive dashboard.

Deep Learning for Pneumonia Detection [GitHub]

- Achieved 97.23% test accuracy in pneumonia detection from chest X-rays using CNN and MobileNet ensemble modeling and fine-tuning.

Certifications

Google Data Analytics, IBM AI Engineering, AWS Cloud Foundations, AWS Data Engineering, Bloomberg Market Concepts