

# SHABBIR M. TASHRIFWALA

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## EDUCATION

### St. Mary's School (ISC) Mumbai, India

Higher Secondary (Grades 11–12)

April 2024 – March 2026

- Grade 11: 92.9% | Predicted Grade 12 (ISC): 95.8% | Grade 10 (ICSE): 92.8%

## EXPERIENCE

### AppPerfect Corporation Udaipur, Rajasthan

Software Development Intern – Data Science & ML

April 2025 – September 2025

- Developed a demand forecasting pipeline for a client retail analytics platform, engineering 20+ features from 50,000+ rows of sales data and training XGBoost regressors that achieved a 19% RMSE improvement over the existing rule-based baseline.
- Prototyped an LSTM-based sequential forecasting model in PyTorch, evaluating deep learning viability against gradient-boosted methods and documenting trade-offs in performance, interpretability, and data requirements.
- Built a K-Means store segmentation module ( $k=4$  clusters via silhouette analysis) and an Isolation Forest anomaly detection system to flag unusual demand events across 40 store locations for the client's operations team.
- Designed interactive Plotly dashboards and a PDF report generator for forecast accuracy and anomaly alerts, incorporated into the client demo. Collaborated within a team of 8 engineers using Agile sprints, Git, and Jira.

## PROJECTS

### Adversarial Robust Deepfake Detection

- Built an adversarially-trained deepfake detector using PyTorch, robust to FGSM and PGD manipulation attacks, maintaining high accuracy on both clean and adversarially-modified videos by learning natural facial feature representations.

### Churn Prevention with Survival Analysis & Next Best Action

- Developed a churn prediction system using survival analysis (Cox PH, Kaplan-Meier) that forecasts both which customers will leave and when, with an automated retention recommendation engine via daily batch processing and real-time API.

### ASL Fingerspelling to Text

- Engineered a real-time ASL fingerspelling-to-text system using MediaPipe 3D hand pose tracking and neural networks to translate hand gestures into written English.

## OLYMPIADS & ACHIEVEMENTS

- Second Runner-Up, Indian National AI Olympiad (INAIO) – IIIT Hyderabad | Top 10 in India
- Selected for IOAI (International Olympiad of AI) Training Camp – Top 22 in India
- Silver Medal, State-level Karate Tournament | Represented India at International Karate Tournament (Philippines)

## TECHNICAL SKILLS

**Languages:** Python, C, C++, Java

**ML / DL:** PyTorch, TensorFlow, scikit-learn, XGBoost, SHAP, survival analysis, adversarial training, LSTMs

**Data & Visualization:** pandas, NumPy, OpenCV, Matplotlib, Plotly, statsmodels, Jupyter, Google Colab

**Core CS:** Data Structures & Algorithms in C++, Standard Template Library (STL)

**Tools:** Git, Jira, Docker (basic), REST APIs

## CERTIFICATIONS

- Machine Learning Specialization – Andrew Ng (Stanford / Coursera)
- Deep Learning Specialization – Andrew Ng (deeplearning.ai / Coursera)
- Practical Deep Learning for Coders – fast.ai

## LEADERSHIP & EXTRACURRICULARS

- School Leader – Appointed representative of the student body at St. Mary's School, Mumbai.
- Event Head – Immaculata, Mumbai's largest interschool cultural festival.
- Team Leader – EUMIND International Exchange; led winning team for Best Article Award.

## AREAS OF INTEREST

Artificial Intelligence, Machine Learning, Deep Learning, NLP, Computer Vision, Generative Models, Reinforcement Learning