

# Aaditya Chopra

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## Education

University of Washington

*M.S. in Data Science*

Seattle, WA, USA

Sep 2024 – Mar 2026

Thapar Institute of Engineering and Technology

*B.E. in Computer Science*

Patiala, India

Jul 2017 – Jun 2021

## Technical Skills

**Languages:** Python, C, C++, R, TypeScript, JavaScript, HTML/CSS, SQL

**Frameworks:** TensorFlow, Keras, Pandas, NumPy, Matplotlib, Seaborn, PySpark, REST API

**Tools:** AWS, AWS Lambda, Docker, Git, Tableau, MS Excel

**Coursework:** Machine Learning, Computer Vision, NLP, Data Structures, Algorithms, Database Management, Operating Systems, Statistics, Probability, A/B Testing, Causal Inference

## Experience

JP Morgan Chase & Co.

Mumbai, India

*Quantitative Research Associate*

Jan 2024 – Aug 2024

- Revamped the Data Quality Program (DQP), **reducing \$150M** in market risk capital by streamlining infrastructure.
- Engineered an in-house anomaly detection system inspired by **Isolation Forest**, monitoring **150,000+ time series** daily and pinpointing statistical anomalies.
- Built a scalable, fault-tolerant, cross-vendor framework using **ARIMA** for time series forecasting, providing key insights on Average Daily Traded Volume to the firm's **Credit Officers** for trade approvals and liquidity add-on calculations.
- Provided mentorship and facilitated seamless onboarding for new team members.

*Quantitative Research Analyst*

Jul 2021 – Dec 2023

- Collaborated with PhDs to implement advanced statistical models for regulatory reporting, boosting accuracy and **cutting manual effort by 98%**. Ensuring compliance with Fed and PRA standards.
- Coordinated with cross-functional teams to optimize essential computational functions, resulting in a **57% reduction** in downstream process runtime.
- Leveraged **DBSCAN clustering** for anomaly detection, identifying high-risk trades and improving risk management.
- Applied **Quantile Regression** and other advanced statistical techniques to enhance Value at Risk (VaR) calculations.

*Quantitative Research Intern*

Jan 2021 – Jun 2021

- Automated time series monitoring using statistical models and Python **saving 80% of manual effort** across the team.
- Developed internal web apps for data visualization with **Python, TypeScript, and React**, enhancing real-time monitoring and communication.

United Health Group (Optum)

Hyderabad, India

*Software Development Engineer Intern*

Jun 2020 – Jul 2020

- Utilized and compared multiple classification models, ranging from **SVM** to **EfficientNet-B7** to classify skin lesions within dermatology images.
- Applied **U-Net CNN** for medical image segmentation, improving diagnostics and treatment planning.

## Projects

**Centralized Intelligent Surveillance System** | *Python, OpenCV, Keras* | [Link](#)

Apr 2020

- Designed a real-time suspicious activity detection system using **I3D deep learning** model, automating alerts to relevant authorities for prompt response in cases of accidents, explosions, and more.
- Achieved a **low false positive rate of 1.7%** and a **false negative rate of 0.8%** on the training dataset.

**Real-Time Heart Rate Measurement from Smart Phone Camera** | *Python, OpenCV, Tensorflow*

Jul 2019

- Used **CNN** to analyze subtle variations in skin color caused by blood flow, detecting heart rate with **93.8% accuracy**.

## Publications

- **A comprehensive analysis of driver drowsiness detection techniques** | Taylor & Francis | [Link](#)
- **Graph Neural Networks in Recommender Systems** | [Link](#)

## Achievements

- Placed among the top **100 out of 20k+** participants in multiple coding competitions hosted by CodeChef, demonstrating strong algorithmic and coding skills.
- Placed as the **runner-up** in college in **ACM-ICPC** (International Collegiate Programming Contest) 2018 and 2019.