

Aditya Chakole

B.Tech in Civil Engg. + M.Tech in Artificial Intelligence and Machine Learning
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Work Experience

MarketFeed — Software Engineer (SWE)

Feb 2024 - Present

- Co-designed and developed a **GPU-accelerated backtesting engine** from scratch with CUDA framework in Python, **cutting backtesting time by 93%** and **cost by 77%**, accelerating quantitative research workflows.
- Optimized low-level software architecture for GPU backtesting engine, **reducing 50% of GPU memory usage**.
- Engineered a Technical Indicator module, achieving **100% accuracy** in realtime computations with 20ms latency.
- Revamped historical data preparation pipeline for processing daily futures and options (FnO) market data, enhancing performance, **reducing costs**, and **cutting Google Cloud Storage usage by 50%**.
- Programmed RESTful FastAPI Quant Service for signal-validation, backtesting, and trading strategy evaluation.
- Integrated **continuous integration** via **GitHub Actions** for unit testing, build automation, and seamless releases.
- Participated in code reviews and followed Agile methodologies, improving code quality and development efficiency.

Cogoport — Software Development Engineer-1 (SDE-1)

Aug 2023 - Oct 2023

- Developed an invoice-consolidation system for FTL shipments, using Ruby on Rails, reducing 30% of billing time.
- Implemented incremental updates and maintained the Full-Truckload (FTL) shipments page using ReactJS.

Education

IIT Kharagpur — 8.3/10

Jul 2018 - Jul 2023

Integrated Dual Degree 5Y — B.Tech in Civil Engg. + M.Tech in Artificial Intelligence and Machine Learning

Class XII Maharashtra State Board — 90.1%

Jul 2017 - Jul 2018

Nutan Bharat Jr. College, Nagpur

Internships And Projects

MTech. Thesis — Detection of Pavement Condition using Deep Learning

Jul 2022 - Jul 2023

- **Computer Vision:** Automated detection of pavement surface conditions using Deep Learning Algorithms.
- Fine-tuned **UNet model** for distress segmentation, achieving **loss under 24%** in crack and pothole detection.
- Showcased a severity estimation algorithm with an accuracy of **82.7%** in estimating pavement distress dimensions.
- Deployed a Streamlit web-application, integrating complete **ML pipeline**, to deliver distress types and severity.

Inscripta AI — Machine Learning Engineer Intern

May 2022 - Aug 2022

- **Time Series Analysis:** Analysis of parking station-related data across the cities of San Diego and Los Angeles.
- Analyzed time series predictability using **ARIMA**, Exponential Smoothing, LSTM, and Graph-based LSTM models.
- Deployed a Streamlit web-app to analyze and forecast the time series leveraging **KNN-based XGBoost model**.

Analytics Vidhya — Software Developer Intern

May 2021 - Jul 2021

- Implemented bookmark functionality for Analytics Vidhya's job portal using the **Django framework**.
- **Developed APIs** to verify email enrollments, sending automated course updates using Django REST Framework.

Technical Skills

- **Programming Languages:** Python, C/C++, Ruby
- **Libraries/Frameworks:** FastAPI, ReactJS, Django, Ruby on Rails
- **Cloud, Databases and DevOps:** PostgreSQL, FireBase, Google Cloud Platform (GCP) Services, Docker, Git/GitHub, CI/CD

Relevant Courses

Programming and Data Structures — Design and Analysis of Algorithms — Linear Algebra for AI and ML
Probability and Statistics — Statistical Foundations for AI and ML — ML Foundations and Applications
DL Foundations and Applications — AI Foundations and Applications — Generative Models For ML