Abhishek Tuteja

San Francisco, CA • +1 510-916-8856 • tuteja.a@northeastern.edu • Portfolio • LinkedIn • GitHub

SUMMARY

MSCS candidate (GPA 4.0, May 2026) who builds AI systems that solve finance problems. 2+ years at Deloitte validating financial transaction processes and trade-finance workflows for global commodity trading and oil & gas clients. Deploys multi-agent LLM architectures, ML models, and financial analytics platforms grounded in real domain experience. Proficient in Python, SQL, machine learning, and applied AI systems.

WORK EXPERIENCE

Teaching Assistant - Northeastern University — Oakland, CA | Jan 2025 – Present

- Supported programming and data systems coursework, assisting with Python, Java, and SQL-based assignments and labs.

Advisory Analyst - Deloitte — Bengaluru, IN | May 2022 – July 2024

- Validated financial transaction processes across 2 SAP S/4HANA migrations for global commodity trading and oil & gas clients, covering multi-currency, multi-entity, and cross-border trade-finance workflows.
- Extracted and analyzed large SAP transaction datasets to identify discrepancies across purchase requisitions, invoices, and trade records; drove open defects to near-zero monthly through systematic end-to-end testing.
- Designed and mapped 100+ financial workflows for a prospective client engagement, documenting process logic, decision points, and edge cases across commodity trading operations.

PROJECTS

PROVA - SR 11-7 Model Documentation Compliance Tool — Mar 2026 – Present

- Designed and deployed a multi-agent LLM system using three concurrent AI agents with a judge/orchestrator layer for cross-agent consistency review, automated retry logic, and targeted re-assessment of disputed findings.
- Built the compliance assessment pipeline to evaluate model documentation across 20 SR 11-7 regulatory elements covering all three validation pillars, extracting per-element gap identification with evidence citations from source documents.
- Generates structured remediation recommendations and a downloadable PDF compliance report with weighted scoring across Conceptual Soundness, Outcomes Analysis, and Ongoing Monitoring pillars.

CapTrack — Dec 2025 – Present

- Built a trade and portfolio analysis platform that ingests and normalizes broker trade data to construct positions with accurate realized and unrealized P&L across multi-asset, multi-currency portfolios.
- Designed deterministic accounting logic handling real-world edge cases including partial fills, short positions, and reconciliation across large, structured datasets.
- Implemented P&L accuracy testing framework to identify calculation errors and quantify portfolio risk measurement precision.

Options Pricing ML Predictor — Dec 2025 – Present

- Developed and benchmarked multiple ML models (Linear Regression, Random Forest, XGBoost) to predict options prices using real market data sourced via yfinance.
- Compared model performance against Black-Scholes theoretical values using RMSE and R^2 metrics to assess predictive accuracy against a domain-grounded baseline.
- Identified XGBoost as highest-performing model, demonstrating limitations of linear approaches for nonlinear options pricing relationships.

EDUCATION

Master of Science in Computer Science — Sept 2024 – May 2026

Northeastern University, Oakland, CA | GPA: 4.00 | Coursework: Algorithms, Database Management Systems, Statistical Methods, Machine Learning, Foundations of AI, Generative AI, Special Topics in AI

Bachelor of Technology in Mechanical Engineering (Minor: Data Science) — July 2018 – July 2022

Manipal Institute of Technology, Manipal, KA

TECHNICAL SKILLS

Programming: Python (Pandas, NumPy, scikit-learn, XGBoost, TensorFlow, QuantLib), SQL, R
AI & LLM Systems: Multi-Agent Orchestration, RAG Pipelines, LLM Prompt Engineering
Machine Learning: Classification, Regression, Random Forest, XGBoost, Neural Networks
Quantitative & Statistical Methods: Probability & Statistics, Time Series Analysis, Monte Carlo Simulation, Model Validation & Cross-Validation, Backtesting Methodology
Finance & Risk: Derivatives Pricing (Black-Scholes, Greeks), VaR/CVaR, Volatility Modelling, Portfolio Risk Metrics
Tools & Platforms: Jupyter Notebooks, Git, SAP S/4HANA, PostgreSQL, MySQL, MongoDB, Excel (Advanced)
Visualization: matplotlib, Tableau, Power BI