

Waiz Khan

Quantitative Researcher — Machine Learning Engineer
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PROFESSIONAL SUMMARY

Quantitative Researcher and Machine Learning Engineer with a proven ability to develop and deploy high-impact models for markets and risk. Specializes in creating factor-neutral trading signals (Sharpe 0.89) and high-performance risk simulations. Builds end-to-end, reproducible MLOps pipelines that have reduced manual review times by up to **88%**.

EDUCATION

Johns Hopkins University

Baltimore, MD

M.S.E. in Data Science, Whiting School of Engineering

Aug 2024 – May 2026 (Expected)

- **Relevant Coursework:** Investment Science; Introduction to Financial Derivatives; Deep Learning; Artificial Intelligence; Computing for Applied Mathematics.

GD Goenka University

Gurugram, India

B.Tech. in Computer Science & Engineering

Aug 2019 – Nov 2023

- **Relevant Coursework:** Optimization Techniques (Operations Research); Numerical Methods; Probability & Statistics; Linear Algebra; Data Mining & Warehousing; Distributed Systems

EXPERIENCE & RESEARCH

KS Aviation Pvt Ltd

Gurugram, India

Sales Analyst Intern

Jan 2023 – Apr 2023

- Automated month-end revenue reports across **6 regions**; cycle time cut by **25%** and numbers became fully traceable (versioned queries and locked inputs).
- Built demand forecasts on **50K+** rows and executive dashboards; review time dropped **20%** and inventory planning became more accurate.

GD Goenka University

Gurugram, India

Research Assistant — Machine Learning

Aug 2022 – Oct 2022

- Predicted chronic student absenteeism on a national dataset of **40,468** students; best model reached **74%** accuracy with fair testing.
- Narrowed from **92** factors to the **27** that matter most (**70%** reduction), making insights easier to act on.

EBMS Solutions Pvt Ltd

Chennai, India

Data Scientist Intern

May 2022 – Sep 2022

- Shipped a churn scoring tool that guided retention campaigns; contributed to a **+15%** lift in customer retention.
- Standardized data checks and reporting tables; weekly reporting stabilized and prep time fell by **30%**.

PROJECTS

Equity Signal Factory

- Built a daily long/short stock signal using clean, rolling tests so results are realistic. Kept the portfolio **balanced to common market styles** so performance reflects the signal, not the market.
- **Results:** Over **579 trading days** (synthetic backtest): **consistent predictive power** (IC **0.050**), **strong risk-adjusted return** (Sharpe **0.89**), **1.5 trades/day** turnover, and **23.8%** max drawdown with **5–25 bps** trading costs and **10–50 bps** borrow. Included a web dashboard for attribution and risk.

EM Yield Curve Scenario Engine

- Modeled daily interest-rate curves and detected **2–3** typical market conditions. Built a “what-if” app so risk teams can test moves up/down or steeper/flatter and see the impact instantly.
- **Results:** Loss limits measured at **1.75%** (99% confidence) and **1.15%** (95% confidence), with average losses beyond those limits of **1.93%** and **1.50%**. A simple hedge was designed to **reduce stress losses by 30–50%**.

HoloRisk — Desktop Risk Console

- Created a fast desktop tool that simulates **100,000** market paths for a 6-bond portfolio and recomputes risk in real time. Results are repeatable and easy to compare run-to-run.
- **Results:** Shows **99% worst-case loss** (VaR) of **\$7.67M** and **average loss in the worst 1% cases** (Expected Shortfall) of **\$8.8M**; runs in **109 ms** per scenario; about **10x faster** than the baseline and **~90%** more stable—enables pre-trade checks in seconds.

BaroPulse

- Apple Watch / iPhone app that estimates blood pressure **without a cuff** by reading tiny color changes in a fingertip video. Adds signal-quality checks and posture guidance so bad readings are filtered out.
- **Results:** Across **80–120** people and **4k–9.6k** samples, average error was **8–9.5 mmHg** (systolic) and **6–6.6 mmHg** (diastolic) with **85–90%** coverage. Adjusts for arm height at **0.77 mmHg per cm**.

Space-Weather Ops Dashboard

- Forecasts solar activity and issues clear alerts with a short daily brief. Calibrated scores map to “alert / monitor / ignore” to avoid alarm fatigue.
- **Results:** **+8 hours** of early warning at **80%** event detection; **false alarms 25%**; analyst review time **30%**.

FRB Detector

- Screens radio-telescope images to flag fast radio burst candidates so scientists review the most promising files first.
- **Results:** Manual checks per file cut by **88%** while keeping **83%** of true events; pilot F1 **0.81** on **600** samples.

EarningsIntel (PEAD NLP Alpha)

- Finds earnings-call language linked to future stock moves and builds a balanced long/short basket around those signals.
- **Results:** Over **333** (synthetic) trading days: **Sharpe 1.65**, average daily rank-correlation **0.078**, and **12.4%** max drawdown.

LEADERSHIP & COMMUNITY INITIATIVES

The Film Society (GD Goenka University)

Gurugram, India

Founder & President

2021 – 2023

- Grew to **40** members; produced **12** screenings and improv shows; built campus partnerships; led editing and delivery schedules.
- Introduced standard shot lists and editing templates to improve consistency and on-time delivery.

Empower (Amity International School)

Gurgaon, India

Founder & President

2017 – 2018

- Program serving **50+** underprivileged girls; set up attendance tracking, volunteer rota, and child-safeguarding coordination.
- Weekly curriculum in sports, chess, dance, and personal development; secured partnerships to sustain programming.

TEDx Amity International School

Gurgaon, India

Sponsorship Manager

2017

- Raised **\$5K+** and managed a **7-person** team for outreach, sponsorships, vendor coordination, and run-of-show.
- Delivered an **11-speaker** event for **200+** attendees on time and on budget.

TECHNICAL SKILLS

Programming: Python, R, SQL, Swift, Bash

ML: scikit-learn, PyTorch, TensorFlow, XGBoost; time-series testing; model calibration; NLP; image models

Markets/Risk: Portfolio balancing; risk-adjusted return (Sharpe); trading cost/borrow modeling; loss limits (VaR/Expected Shortfall); yield-curve modeling; backtesting

Data/Platforms: pandas/NumPy, SciPy, Jupyter; ETL/pipelines; SQL (PostgreSQL/MySQL); Spark; Tableau; Power BI

MLOps/Apps: Git; Docker; MLflow; FastAPI; Streamlit; REST APIs

iOS: SwiftUI; AVFoundation; HealthKit; WatchConnectivity; Core ML (on-device)