

Meet Babariya

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SUMMARY

Business Information Systems student (grade 1.55) with **2.5 years of live index-options trading** and a research workflow built on clean backtests and out-of-sample testing. Ranked **12th in Germany** in IMC Prosperity 4 and top 1% on Kaggle. Currently an ML Benchmark Engineer at Datacurve (Y Combinator). Seeking a **quant research, trading or quant-developer internship** in Germany.

EXPERIENCE

Jainam Broking

Derivatives Trader

Surat, India

Apr 2022 – Dec 2024

- Traded weekly NIFTY and BANKNIFTY index options using delta-neutral structures across expiry cycles.
- Managed real-time hedging and position risk, re-balancing delta and vega exposure as volatility expanded.
- Sized and monitored positions with options-pricing models and Greeks-based limits.

Datacurve (Y Combinator) — Project Eris

Remote

ML Benchmark Engineer (Contract)

Sep 2026 – Present

- Design ML benchmark challenges (data pipeline, evaluator, rubrics, reference solution) used to train and evaluate AI agents. Built 25+ designs across vision, sequence and LLM-evaluation tracks.
- Calibrated difficulty statistically using baseline ladders and exact Bayes-optimal decoders to prove information ceilings. Hardened graders against leakage and look-ahead.

EDUCATION

Furtwangen University (HFU)

Furtwangen, Germany

B.Sc. International Business Information Systems

Mar 2025 – Present

- Current grade: **1.55** · [Transcript](#) · Self-study: MIT OCW *Topics in Mathematics with Applications in Finance* (stochastic calculus, derivative pricing)

QUANT RESEARCH & PROJECTS

Options Model Validation Lab — live BTC options (Deribit) | Python, SVI, Heston, SABR

[Live dashboard](#) · [GitHub](#)

- Validated 6 pricing models on ~900 live BTC options, rebuilt daily: arbitrage-free **SVI** surface with **0.13 vol pts** median error (99% of quotes inside bid-ask). Showed **Heston** is tightly identified yet implausible (model risk, not noise), and that **Bates** jumps fix the fit, not the dynamics.
- Rebuilt a year of chain history from free trade data (forward inferred from trade IV, <0.5 bp error) and backtested seven deltas out of sample on **18,555 option-days**: sticky strike beats sticky moneyness (–12%) and Heston/Bates (–15%), as spot-vol correlation flips sign by month. Auto-generated bank-style validation report; 23 tests vs published references.

Intraday Breakout Strategy — Audit & Improvement | Python, pandas, 1-min equity data

report on request

- Rebuilt an opening-range breakout strategy from its specification (97% trade-direction match) and showed that ~30% of its reported P&L came from optimistic intrabar fills and zero slippage.
- Diagnosed it as a long-volatility edge: in a regime stress test the same rules lost money in a calm year. A **volatility-scaled trigger** raised Sharpe by 78% and cut drawdown by 35% in walk-forward out-of-sample tests, and a volatility gate removed the losing regime.

QuantPilot — risk-adjusted trader ranking on Hyperliquid | Python, FastAPI, TypeScript, PostgreSQL

code private

- Ranks perpetual-futures traders by risk- and funding-adjusted returns with a Deflated-Sharpe filter against luck, feeding a non-custodial copy-trading and execution layer. The ranking worker has run on live mainnet data.

Derivatives & Risk Toolkit | Python, Excel/VBA

- [Delta-hedging simulator](#) · [GARCH strategy](#) · [Portfolio VaR](#) (historical, parametric, Monte Carlo) · [Excel/VBA risk report](#) · [credit-risk PD / EL models](#).

COMPETITIONS & ACHIEVEMENTS

- IMC Prosperity 4** (algorithmic trading): 230th / 18,803 teams worldwide, **12th in Germany**.
- AlgoTrade Hackathon 2025** (Zagreb): implemented options market-making and arbitrage strategies in a simulated exchange.
- Kaggle Competitions Expert** (top 1%): Silver, CIBMTR (120th / 3,325); Bronze, MITSUI Commodity Prediction (165th / 1,711).
- WorldQuant BRAIN**: Gold level in the WorldQuant Challenge.

CERTIFICATIONS

NISM Series-VIII Equity Derivatives & Series-XV Research Analyst (SEBI, India) · Applied Data Science Lab, WorldQuant University

SKILLS

Quant / Finance

Options pricing & Greeks, volatility surfaces (SVI/SSVI), stochastic vol (Heston, SABR), model validation, delta hedging, GARCH, Monte Carlo, VaR / CVaR, portfolio optimisation, backtesting & walk-forward validation, market microstructure

Programming

Python (pandas, NumPy, SciPy, scikit-learn, PyTorch), SQL, C++, R, TypeScript, Excel / VBA

ML / AI

Gradient boosting, time-series ML, deep learning, LLM agents & RAG, model evaluation

Languages

English (fluent), German (A2, actively learning)