

Baz Cosmopoulos

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EDUCATION

University of Michigan

B.S. Financial Mathematics & Data Science, Minor in Computer Science

Ann Arbor, MI

Expected Dec 2027

- **Coursework** — Combinatorics, Probability, Machine Learning, Data Mining, Real Analysis, Numerical Methods.

COMPETITIONS

IMC Prosperity Global Trading Challenge — 41st of 12,626 (top 0.33%).

Michigan Quant Conference Market-Making Competition — 2nd place, sponsored by IMC and Old Mission.

EXPERIENCE

SCALP Trade, Valkyrie Trading, PEAK6

Incoming Quant Trading Intern (SCALP); Trading Bootcamp Participant (Valkyrie, PEAK6)

Chicago, IL

May – Aug 2026

Gnosis

Quantitative Research Intern

Prague, CZ

Feb 2026 – Present

- Built an informed-trader signal that scores on-chain wallets by realized edge and accuracy to construct a flow-weighted probability index, backtested across 1,197 prediction markets.
- Built event-driven backtester from scratch, reconstructing true on-chain AMM reserves block-by-block and cutting simulated drawdown error by 87% versus the prior implementation.
- Audited on-chain activity across 1,000 trades and 119 agent wallets, cataloging 16 exploitable vectors including active JIT liquidity extraction and sandwich attacks.

Michigan Finance & Mathematics Society

Co-President. Previously VP External and Quant Sports Betting Team Lead.

Ann Arbor, MI

Feb 2025 – Present

- Led the quant sports-betting team to build an NCAA point-spread model (hoops-spread) using walk-forward XGBoost and half-Kelly sizing, returning 9.75% ROI and 2.96 Sharpe over 15,276 out-of-sample bets.
- Grew project-team participation from 0 to 35 members and organized a 25-person Chicago trek to Old Mission Capital and PEAK6 trading floors.

PROJECTS

Backtesting Engine for Systematic Trading | Python, Numba, Optuna

[GitHub](#) · Mar 2026 – Present

- Shipped an open-source pip install-able backtesting engine with overfitting detection (PBO, Deflated Sharpe, bootstrap CI, walk-forward) built in as the core validation pipeline.
- Estimated realistic fills from price data alone using Corwin-Schultz and Roll spread estimators, giving strategies three execution scenarios to stress-test edge against transaction costs.
- Standardized reproducible strategy evaluation with built-in robustness diagnostics, parameter sweeps, and research artifacts for comparable out-of-sample validation.

Deep RL Options Hedging Agent | Python, PyTorch, Backtrader

[GitHub](#) · Jan 2025 – Present

- Trained a PPO+LSTM agent to hedge a 10k-share SPY position using long-dated options instead of delta, with a transaction-cost-aware reward tuned over a 240-config Optuna Pareto sweep.
- Beat a delta-hedging baseline in 95% of multi-seed runs on a 2008 to 2023 SPY backtest, cutting annual volatility by 23.8% and transaction costs by 96%.

Kalshi Microstructure Research Paper (sole author, May 2025)

[GitHub](#)

- Analyzed retail versus institutional flow in the 2024 U.S. election prediction markets using DP-GMM trade classification, Granger causality, and power-law price impact across 3.5 million trades.

TECHNICAL SKILLS

Languages — Python, C++, SQL.

Libraries/Tools — PyTorch, Numba, Optuna, Backtrader, Git, Linux.

Math/Stats — Probability Theory, Combinatorics, Time Series, Monte Carlo.

Trading — Market Microstructure, Options and Greeks, Kelly Criterion, Backtesting, Overfitting Diagnostics.