

Nicholas Belev

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Computer Science and Finance senior with experience building production analytics, backend services, and quantitative risk systems for financial institutions. Strong in Python, SQL, APIs, and data-driven problem solving for large-scale investment and risk platforms.

EDUCATION

McGill University, Montreal, QC
B.Sc. Computer Science & Artificial Intelligence; Minors in Mathematics, Finance
GPA: **3.95 / 4.00**

Graduation: May 2026

IE University, Madrid, Spain
Exchange Semester in Computer Science & Artificial Intelligence (Winter 2025)

EXPERIENCE

Santander Bank, *Data Analytics Intern (Return Offer)* Boston, MA Jun 2025 – Aug 2025

- Led the firm's first **AI audit** by designing adversarial prompt test suites and statistical performance metrics; automated **IBM WatsonX API** testing to evaluate model risk, prompt injection defenses, and PII handling.
- Identified and remediated **critical AI governance gaps** through quantitative analysis of system failure modes.
- Built a **Power BI** dashboard backed by **Oracle SQL and DAX** to forecast audit workload and support resource allocation for a **150+ person** department.
- Refactored Anti-Money Laundering audit tooling by optimizing **TF-IDF vectorization** and fuzzy matching pipelines, achieving a **3x runtime improvement**.

Northfield, *Quantitative Analyst & Software Engineer* Boston, MA May 2024 – Sep 2024

- Developed portfolio construction and optimization analytics in **Python** using internal APIs, supporting long/short equity strategies and capital allocation for a **\$65B AUM** wealth manager.
- Built **production-grade Python and SQL pipelines** for factor attribution, volatility monitoring, and investment performance alerts.
- Migrated **16,000+** legacy factor model data files into **PostgreSQL** and designed a **Docker-deployed FastAPI backend** enabling **sub-10 ms** queries for investment risk models.

McGill University Sailing Team, *Director of Finance* Montreal, QC Nov 2023 – Nov 2025

- Managed **\$100K+** in assets; prepared budgets, reconciled financial statements, and supported audits and tax reporting.
- Built expense forecasting models with **96% accuracy** to inform capital planning and improve cost efficiency by **1.5x**.
- Co-led fundraising initiatives increasing team assets by **\$20K** within **one month**.

PROJECTS

Custom ETF Pricing & Portfolio Analytics Tool Oct 2025 – Dec 2025

- Built a **Python-based analytics tool** to price custom equity ETFs and evaluate expected returns using **multi-factor asset pricing models**.
- Estimated **alpha, factor betas, and risk-adjusted performance** via rolling-window regressions on historical equity data.
- Performed **market risk decomposition** to separate global and local risk drivers for portfolio construction decisions.

AI Agent for Othello (on GitHub) Oct 2024 – Dec 2024

- Implemented a competitive Othello-playing AI using **alpha-beta pruning**, iterative deepening minimax, and **Zobrist hashing**.
- Designed a custom state evaluation heuristic incorporating **stability, mobility, and control** under strict time and memory constraints.
- Achieved a **100% win rate** versus greedy agents, **99%** versus stochastic agents, and **80%** versus top peer minimax implementations.

TECHNICAL SKILLS

Programming: Python, Java, C/C++, OCaml, Solidity

Data & Machine Learning: SQL (PostgreSQL, Oracle, MS SQL Server), R, Pandas, NumPy, scikit-learn

Backend & Systems: FastAPI, REST APIs, Docker, Linux/Unix, Bash

Cloud & Tools: AWS (EC2), Git, Power BI, Excel (VBA), LaTeX