Nicholas Belev

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University Junior seeking an internship within the finance industry where I can apply my analytical and problem-solving expertise to solve challenges while further developing my programming and business skill set in a corporate environment.

Education

Bachelor of Science in Computer Science and AI | McGill University | *Montreal, QC* (Aug 2022 – Present)
▪ **Business Minor in Finance** ▪ CGPA: *3.93* ▪ Graduation: May, 2026

Key Coursework: Data Science, Statistics, Finance, Artificial Intelligence, Software Design, Data Structures and Algorithms, Operating Systems, Computing Systems, Financial Accounting, Macroeconomics, International Business

Additional Coursework:
▪ Cybersecurity Foundations, *Google Cloud* ▪ Data Visualization in JavaScript, *UMass Amherst*
▪ Stock Market and Investment Research, *Bentley University* ▪ Artificial Intelligence Fluency, *Adava University*

Technical Skills

Data Science & Analytics – Python, AWS, Jupyter Notebook, RStudio
Databases and SQL – Microsoft SQL Server, PostgreSQL, SQLite, Python SQL API (ex. PyODBC)
Developer Tools – FastAPI, Apache, Docker, Git Version Control, Linux / Unix Proficiency
Programming – Java, C / C++, JavaScript, Visual Basic, MIPS Assembly, OCaml
Productivity Tools – Microsoft Excel, PowerPoint, Word

Professional Experience

Production Software Developer Intern | **Northfield Information Services** | *Boston, MA* (May 2024 – Sep 2024)
- Utilized Python to automate the conversion and migration of decades worth of historical risk model data files into SQL databases.
- Conducted performance tests to determine the optimal storage structure, comparing SQLite, PostgreSQL, MS SQL server databases.
- Optimized SQL queries through Python PyODBC, PostgreSQL, SQLite3 libraries to enhance data accessibility and automate analysis.
- Developed and Docker Containerized a FastAPI web app to facilitate efficient database client queries and responses.

Quant Analyst - Developer Intern | **Northfield Information Services** | *Boston, MA* (May 2023 – Sep 2023)
- Implemented a "Householding" algorithm using Python and Northfield's Optimizer API to efficiently optimize the risk and return of conglomerate investment portfolio holdings while respecting individual portfolio preferences and risk tolerances.
- Utilized Python and SQL to identify time-series and cross-section trends in different dimensions of risk model data.
- Monitored shifts in security and risk factor volatility, identifying areas of concern for client portfolios.
- Designed and implemented data structure in credit rating estimation solution, enhancing reliability of risk analysis.

Treasurer | **McGill University Sailing Team** | *Montreal, QC* (Nov 2023 – Present)
- Manage $85,000 in assets, preparing account budgets and communicating financial status to McGill Athletics for audits and tax reporting in accordance with small business standards.
- Forecast expenses with 96% accuracy applying statistical methods to historic data to ensure financial sustainability.
- Create comprehensive financial reports: cash flow statements, balance sheets, and expense tracking by event, enabling performance-to-cost analysis, enhancing the team's financial strategy.

Independent Projects

AI Player for Othello (on GitHub) | (Oct 2024 – Dec 2024)
- Designed an Othello game-playing AI, combining Alpha-Beta pruning, iterative deepening Minimax, and Zobrist hash state caching.
- Developed a game-state evaluation heuristic assessing stability, mobility, and position metrics, leveraging move-order techniques to calculate an optimal move under 2-second time and 500 MB memory constraints.
- Achieves 100% win rate vs. Greedy agents; 99% win rate vs. Stochastic agents; 67% win-rate vs. other Minimax agents.

Stock Evaluation Utility | (Dec 2022 – Mar 2023)
- Developed a Python application to evaluate potential stock over or under-valuation and forecast future performance.
- Parsed financial statements and stock data from Yahoo Finance using Pandas, Requests, and Selenium Libraries.
- Calculated fundamental analysis ratios and derived a multivariable regression with autoregressive terms to capture momentum and reversals in stock behavior.

Emulated Filesystem (on GitHub) | (Jan 2024 – May 2024)
- Created and integrated a Unix-like command-line interface and language to interact with the filesystem, using C.
- Designed a paging system to run programs with a Least Recently Used (LRU) page replacement policy to manage memory efficiently.
- Built a file system capable of reading and writing to simulated disks, employing index nodes and indirection to optimize data writing and reading speed.