

Anton Matchev

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EDUCATION

Cornell University, B.S., Computer Science, Operations Research; M.Eng., Computer Science

Aug. 2022 – May 2026

Coursework: Deep Learning, Algorithms, Financial Engineering, Machine Learning, Systems Programming, Artificial Intelligence, Optimization, Linear Algebra, Functional Programming

GPA: 3.97/4.00

TECHNICAL SKILLS

Languages/Frameworks: Node.js, Express, Flask, Django, Spring Boot, Angular, PyTorch, TensorFlow, NumPy, Pandas, Scikit-learn, Docker, Google Cloud Platform, Git, Postman, VS Code, AWS, Datadog, Solr

Proficient: Python, Java, TypeScript | Intermediate: C++, SQL, OCaml, | Basic: C, HTML, CSS

PROFESSIONAL EXPERIENCE

Millennium Management LLC, Software Engineering Intern

Jun. 2025 – Aug. 2025

- Developed cross-asset search architecture and novel user personalization algorithm for search recommendations in Trading UIs
- Designed and deployed seven custom metrics to monitor and improve autocomplete search accuracy for platform users
- Optimized Solr equity and future query parsing, reducing post-processing overhead by 50%

AlgoLink, Machine Learning Engineer

May 2024 – May 2025

- Implemented novel recommendation algorithm utilizing Funk MF, ordinal regression, and random search for hyperparameter tuning to recommend candidates to internships/jobs given enterprise and student prior preferences
- Wrote Python scripts to vectorize 700+ internship postings and created a PDF parser to compile a 150+ question test bank
- Engineered multi-dimensional candidate ability assessment by training-per dimension logistic regression models on difficulty-weighted question vectors, introduced fallbacks for uniform and perfectly separable scoring scenarios

National Center for Supercomputing Applications, Researcher

May 2024 – Dec. 2024

- Utilized hybrid-dilated convolution and graph neural networks for gravitational wave detection and their parameter estimation
- Achieved state-of-the-art performance using a 30% simplified model architecture (two misclassifications in 10+ years of data)

Self-Employed, Portfolio Manager

Jan. 2020 – Dec. 2021

- Acted as *de facto* portfolio manager for a brokerage account sponsored by friends/family, overseeing initial capital of \$5,000
- Designed and executed algorithmic trading strategy leveraging RSI and 50 DMA, increased portfolio value to \$12,000

LEADERSHIP EXPERIENCE

Cornell AppDev, Backend Lead and Course Instructor

Feb. 2023 – Present

- Integrated pretrained sentence encoder from TensorFlow that matches items to user requests and relates similar items for Resell, a virtual marketplace app written in TypeScript/Express/routing-controllers with 1,000+ users
- Instructed CS 1998-603: Intro to Backend Development, an official Cornell-listed course on client-server architecture, database design, etc. to 200+ students. Held biweekly lectures, weekly office hours, and managed 10 teaching assistants (2023-2024)

PROJECTS

- LSTM Equity Trader:** built an end-to-end S&P 500 forecasting dashboard and backtesting framework with five LSTM variants, achieving 62.2% directional accuracy on next-day prediction across all assets. Integrated K-Means clustering to display distinct market regimes, enabling regime-aware model selection
- Higher Moment Alpha:** developed long/short equity portfolio using realized skewness and kurtosis signals on the S&P 500, achieving a 13.1% annual return and 1.36x Sharpe Ratio over a five-year hold. Validated signal robustness through Monte Carlo jump-diffusion simulations under realistic microstructure noise
- All In:** created a fantasy sports trading app where users can buy and sell contracts tied to different NCAA game statistics. Built a web scraper and developed a contract generation algorithm and to generate probabilities/payouts of different events

HONORS AND AWARDS

- Mathematical Olympiads:** 4x AIME Qualifier, 2x Mu Alpha Theta State and National Champion, ARML Participant
- High School Mathematical Contest in Modeling (HiMCM) Finalist:** developed an algorithm to generate ideal summer jobs for high school students (top 5% of teams worldwide)