Nicholas M. Vega

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EDUCATION

The University of Chicago — Chicago, IL
M.S. in Computer Science — Expected May 2026
B.S. in Computer Science (Specialization in Machine Learning), B.A. in Economics — May 2025
Relevant Coursework: Mathematical Foundations of Machine Learning, Machine Learning, Introduction to Neural Networks, Statistical Methods and Applications, Machine Learning for Computer Systems, Theory of Algorithms

PROFESSIONAL EXPERIENCE

Data Science Intern — June 2025 - August 2025
LOCOMeX Group — Philadelphia, PA

- Enhanced time-series forecasting models for EV adoption and energy utilization through normalization, feature engineering, residual analysis, and hyperparameter tuning, reducing error by 24% and 20%, respectively.
- Promoted to lead an 8-member team in building an automated ETL pipeline to extract ESG and market data, enhancing a gradient-boosting model for a green-bond forecasting tool by achieving a 28% RMSE reduction.
- Deployed four machine learning models as containerized AWS Lambda functions via Docker and AWS ECR, integrating with API Gateway for real-time inference with <250ms latency and 35% lower infrastructure cost.

Data Science Intern — January 2024 - June 2025
FoodFight — Chicago, IL

- Designed an admin dashboard with Python, SQL, AWS Lambda, and S3 to track user engagement and venue performance, and support actions such as adding venues, clearing live bets, and posting announcements.
- Implemented a personalized bet recommendation system using user history, favorite sports, and game context to train multinomial classification models that predicted likely bet selections for targeted in-app suggestions.
- Constructed an internal automated bet creation tool using AWS Lambda and Retool, enabling non-technical staff to configure, manage, and deploy live props and betting events directly to the FoodFight platform.

Investment Analytics Intern — June 2024 - August 2024
LGIM America — Chicago, IL

- Developed a statistical risk analytics tool using Bloomberg data, SQL, and VBA to assess portfolio deviations, measure tracking error, and analyze benchmark divergence, enabling forward-looking risk evaluation.
- Automated data pipelines with SQL and VBA to compute financial metrics across large datasets, cutting manual processing time from three hours to two minutes for ad-hoc investment analysis.

Investment Analyst Intern — June 2023 - June 2024
Ann & Robert H. Lurie Children's Hospital of Chicago — Chicago, IL

- Presented a machine learning-based classification strategy to the CIO that optimized the timing of U.S. equity allocations by training on engineered time-series features and validating with TimeSeriesSplit cross-validation.
- Created an automated dashboard with Python and SQL to visualize the hospital's investment positioning alongside economic and market data, reducing the CIO's daily report review time.

ACTIVITIES

University of Chicago Association for Computer Machinery (ACM) — September 2023 - May 2025

- Founded and led the University of Chicago ACM chapter of 100+ members, dedicated to fostering an inclusive environment for students passionate about computer science.
- Organized and participated in the Machine Learning and Software Engineering committees, hosting workshops, hands-on coding sessions, topic discussions, and industry guest speaker events.

PROJECTS

Chess Opening Recommender

- Engineered a data pipeline to profile a given Lichess user and 15,000+ elite players' playing style by extracting and aggregating 14 key features (aggression, queen usage, etc.) from past games into concise style vectors.
- Built an opening recommender system that clusters a user's style vector against a cached pool of 15,000+ elite player vectors and computes weighted performance metrics to suggest six successful, tailored openings.

SKILLS

Programming: Python (NumPy, Pandas, Scikit-learn, Matplotlib, TensorFlow), SQL, C, VBA
Technology & Tools: Amazon Web Services (S3, EC2, ECR, Lambda), Docker, Postman, Git