

Andrea Turek

630-715-6094 | turekam06@gmail.com | [linkedin.com/in/andrea-turek](https://www.linkedin.com/in/andrea-turek) | github.com/amturek2 | aturek.vercel.app

EDUCATION

University of Illinois Urbana - Champaign

Champaign, IL

B.S. in Statistics and Computer Science, Minor in Mathematics (3.95/4.00)

Graduating: May 2028

Relevant Coursework: Data Structures, Algorithms, Applied Machine Learning, High Frequency Trading Technology

TECHNICAL SKILLS

Languages: C++, Python, Java, SQL, TypeScript, JavaScript, R, MATLAB

Systems & Tools: Snowflake, DuckDB, Git, Linux, Spring Boot, Flask, Angular, React, Node.js

Libraries: Gurobi, NumPy, pandas, SciPy, scikit-learn, PyTorch, TensorFlow, XGBoost, LightGBM

EXPERIENCE

Quantitative Developer Intern

Dec 2025 – Present

Octus Intelligence / Sky Road LLC

Naperville, IL

- Engineered a **Java batch-processing system** for CLO portfolio optimization, reducing model analysis time by up to **~98%** by parallelizing parameterized model variants across large trade-search spaces
- Benchmarked **LINDO**, **Gurobi**, and **D-Wave** solver backends for constraint-heavy CLO portfolio optimization, comparing runtime, solution quality, and scalability across parameterized trade scenarios

Undergraduate Research Assistant - Robotics & Motion Planning

Aug 2025 – Present

Parasol Lab, University of Illinois Urbana-Champaign

Champaign, IL

- Implemented and benchmarked **C++ motion-planning algorithms** within the lab's research library, comparing data structures and search strategies to **reduce pathfinding time** across complex configuration spaces
- Built a **Python** benchmarking pipeline testing solvers across **21** environment/scale configurations and **2–128** agents, generating runtime, cost, and scalability data to train an **ML-based algorithm-selection model**

Software Engineer Intern

Dec 2024 – Aug 2025

Sky Road LLC

Naperville, IL

- Developed an interactive financial analytics platform in Angular/TypeScript, enabling asset managers to filter and evaluate **300+ live market deals** through synchronized charts, grids, and calendars
- Designed configurable financial tear-sheet dashboards aggregating fundamentals, trade history, and analyst data from **8+ API integrations**, transforming credit-market data into interactive views for asset-management clients

PROJECTS

Flight Connection-Risk Simulator | *Python, pandas, NumPy, scikit-learn, XGBoost, SciPy, LightGBM, DuckDB*

- Built an end-to-end ML and **backtesting engine** predicting flight-delay risk and simulating missed-connection probability, modeling itinerary selection as a **decision-under-uncertainty** problem
- Backtested a model-based reliability strategy against **4 baseline routing heuristics** using historical flight data, evaluating missed-connection rate, median/90th-percentile delay, and strategy win rate

Cancer Detection Pipeline | *Python, NumPy, Jaccard Similarity, FASTA/FASTQ*

- Built a probabilistic classification pipeline using **Bloom filters** and **Jaccard similarity** to distinguish cancerous from normal tissue, compressing **362GB** of raw genomic data to **3.4GB** while preserving classification signal
- Improved classification reliability by filtering sequencing noise, comparing tissue samples against cancer-associated gene filters, and tuning hash functions, Bloom filter sizing, and similarity thresholds

LEADERSHIP & ORGANIZATIONS

Creative Director / Senior Consultant - CUBE Consulting

Aug 2025 - Present

- Promoted to Senior Consultant, leading a team of **4** consultants delivering an AI-powered operations system for **Amazon Web Services**, directing weekly workstreams and technical decision-making
- Serving as Creative Director on CUBE's executive board, mentoring **30+** new consultants while owning brand strategy and growth initiatives across prospective members and sponsors

CS Student Ambassador / Research Scholar

Aug 2024 - Present

- Mentored **10+** students and contributed **300+** hours to CS research, outreach, and peer advising