# Tyler Dong

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## EDUCATION

**Northeastern University, College of Engineering,** Boston, MA — Sep 2024 - Present
*Candidate for a Bachelor of Science in Computer Engineering and Computer Science*
**Cumulative GPA:** 3.964/4.0 | Dean's List (each semester) | IBM Thomas J. Watson Memorial Scholarship Recipient
**Coursework:** Object Oriented Design, Networks, Discrete Structures, Differential Equations and Linear Algebra, Physics 1 & 2
**Activities/Societies:** Combat Robotics, MIT Augmentation Lab, REV Startup School, Wireless Club, NEU SASE, CodePath
**CodePath**: Intermediate Technical Interview Prep (Advanced) - Data Structures & Algorithms

## SKILLS

**Programming Languages:** Python, Java, C++, C#, JavaScript, TypeScript, HTML, CSS, MATLAB
**Frameworks & Libraries:** PyTorch, NumPy, pandas, Matplotlib, React, Next.js, React, Tailwind, Flask, OpenCV, JUnit
**Development Tools & Platforms:** Git, Supabase, Firebase, Visual Studio Code, InteliJ
**Electronics & Design Engineering:** Arduino, Solidworks, AutoCAD, OnShape, Soldering, Tinkercad

## EXPERIENCE

**Khoury College of Computer Science** — Remote
*Teaching Assistant* — Jun 2025 - Aug 2025

- Support and grade 70+ students in core computer science topics including binary/hexadecimal systems, Boolean logic and circuit design, graph theory and traversal algorithms, sorting algorithm analysis, and computational complexity (Big O notation)
- Hosted 2 hour weekly office hours and guided students through discrete math concepts including combinatorics and permutations, probability theory (conditional probability, Bayes' theorem, expectation, variance), set theory, and rigorous proof techniques

**Outamation** — Remote
*AI Automation Extern* — May 2025 - Jul 2025

- Engineered AI-powered workflows to automate document classification and data extraction, using Natural Language Processing (NLP), Computer Vision, and Python-based pipelines (PyMuPDF, OCR techniques)
- Developed a retrieval system with LlamaIndex and Retrieval-Augmented Generation (RAG), leveraging Hugging Face embeddings to improve information search accuracy and information retrieval across complex mortgage documents
- Benchmarked open-source AI models for document processing performance, delivering a comprehensive report on optimization strategies and deployment recommendations

**Quartzy Capital Advisors, LLC** — New York, NY
*Data Research Intern* — Jun 2023 - Aug 2023

- Developed a Python tool leveraging yfinance and pandas to automate historical financial data analysis and calculate key financial metrics, fully eliminating manual Excel calculations and data entry errors, reducing processing time by over 95%
- Analyzed and organized financial instrumentation on a quantitative investment database with 500+ securities
- Reviewed and evaluated 200+ institutional investment prospects to identify potential opportunities

## PROJECTS

**SnakeRL [GitHub] |** *Python, PyTorch, NumPy, Gymnasium, Stable-Baselines3, Poetry, Pygame, Matplotlib, TensorBoard* — Jul - Aug 2025

- Engineered deep reinforcement learning system for Snake game agent using proximal policy optimization (PPO), with support for 100+ vectorized parallel environments with novel real-time visualization of all concurrent training episodes for live policy analysis
- Implemented custom reward engineering with distance-based heuristics, temporal efficiency bonuses, and dynamic scaling, alongside observation normalization, automated model persistence, and TensorBoard metrics tracking for performance monitoring

**NBA Player Consistency Analyzer [GitHub] |** *Python, HTML, JavaScript, CSS, Flask, nba_api* — Mar - Apr 2025

- Developed a responsive web application to analyze NBA player consistency using live data from nba_api
- Enabled users to dynamically set thresholds and game count to identify players based on points, rebounds, and assists

**Spotify Playlist Updater [GitHub] |** *Python, Spotify Web API, Spotipy* — Nov 2024 - Jan 2025

- Created a command-line tool to automate playlist management by adding all songs from user-specified artists
- Built support for real-time artist tracking, automatically detecting and adding new releases to the playlist as they become available
- Incorporated functionality to filter out duplicate or alternate versions of songs (remixes, live versions, etc.) from playlist

## ACHIEVEMENTS/AWARDS

**4th Place overall at STHacks: ManImTired [Devpost]** — Mar 2025

- Developed an LLM-powered application that generates educational Manim script videos from natural language prompts

**HackOlympian Finalist, top 5 out of 105 projects at HackIllinois: SpendShield [Devpost]** — Feb - Mar 2025

- Built a gamified social finance application that transforms financial management into an engaging social experience

**"Best Design" out of 40 projects at Civic Tech Hackathon: AnimaGo [Devpost]** — Feb 2025

- Engineered an augmented reality mobile app that gamifies wildlife discovery and conservation through real-time species identification, enabling users to explore outdoors, catalog findings in a personalized "Biodex," and contribute to citizen science efforts

**1st Place for "Interstellar Intelligence" (AI/ML) Track out of 49 projects at BostonHacks: SVS Lunar Client [Devpost]** — Nov 2024

- Implemented a deep reinforcement learning model that simulates space environments to train AI to complete specific tasks