Tyler Dong

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EDUCATION

Northeastern University, College of Engineering, Boston, MA
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: Algorithms & Data Structures, Object Oriented Design, Computer Systems, Embedded Design: Enabling Robotics, Networks, Discrete Structures, Differential Equations & Linear Algebra, Physics 1 & 2
Activities/Societies: Combat Robotics, MIT Augmentation Lab, REV Startup School, Wireless Club, NEU SASE, CodePath (Certificate)

SKILLS

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

EXPERIENCE

Khoury College of Computer Science Remote
Teaching Assistant Jun 2025 - Present

- Supported 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)
- Led 2 hour weekly office hours, guiding 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 by 2x across complex mortgage documents
- Benchmarked open-source LLMs (Mistral 7B, Phi-2, TinyLlama) 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
- Assessed 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
- Accelerated model convergence by 7x through custom reward engineering, implementing distance-based heuristics, temporal efficiency bonuses, and dynamic scaling; integrated TensorBoard visualization for performance tracking

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

- Developed a responsive web application to analyze player consistency for 570+ active players using live data from nba_api
- Designed system to enable users to dynamically set thresholds to identify players based on recent games, 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
- Optimized playlist quality by implementing intelligent filtering for duplicates and alternate versions, ensuring clean music libraries

ACHIEVEMENTS/AWARDS

4th Place overall - STHacks [Devpost] | *Python, Manim, DearPuGui, Fast API, Langchain, OpenAI* 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 - HackIllinois [Devpost] | *TypeScript, React, Next.js, Tailwind, Supabase* Feb - Mar 2025

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

"Best Design" out of 40 projects - Civic Tech Hackathon [Devpost] | *Python, PyTorch, MoonDream, SAM2, FastAPI, Firebase* 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 - BostonHacks [Devpost] | *C#, PyTorch, ML-Agents* Nov 2024

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