Aaron Abramson

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EDUCATION

Worcester Polytechnic Institute (WPI) — Worcester, MA
Master of Science in Computer Science — Aug. 2025 – May 2027
Bachelor of Science in Computer Science, GPA: 4.0/4.0, Dean's List — Aug. 2023 – May 2027

Related Coursework: Machine Learning, Deep Learning, Machine Learning in Cybersecurity, Intro to Artificial Intelligence, Software Engineering

PROJECTS

Machine Learning From Scratch Library | *Python, NumPy (In development: FastAPI)* — Aug. 2025 – Present
- Engineered a suite of 9 traditional machine learning models from scratch using only NumPy, including KNN, K-Means, Decision Trees, SVM, PCA, and others
- Achieved 90%+ accuracy on every classification model with Scikit-learn datasets
- Currently implementing a deep learning module for customizable neural network layers and activation functions
- Constructing a FastAPI-powered interactive web application to teach machine learning principles

Interactive Qualifying Project – Acadia National Park | *Python, Flask, SQLite, IoT* — Summer 2025
- Evaluated the feasibility of real-time transmission of traffic data to automate IoT devices
- Developed a data visualization website and API endpoint using Flask for receiving live field data
- Presented an 80% success rate of the live data transmission to Acadia National Park

AI Board Game Player | *Adversarial Search, Heuristic Evaluation* — Jan. 2025 – March 2025
- Designed an AI player using a customized Minimax algorithm to play a chess-like board game
- Averaged a 99%+ win rate against various human opponents
- Won 1st place in a tournament competing against other AI players

TA Application Portal Website | *Flask, PostgreSQL, Bootstrap, Git, Agile Development* — Oct. 2024 – Dec. 2024
- Built a full-stack web platform enabling professors and students to connect for TA positions
- Created a REST API using Flask and PostgreSQL to store TA applications by course section
- Optimized the application process with a user-friendly interface designed in Bootstrap

EXPERIENCE

Directed Independent Research in AI Ethics and Responsibility — Jan. 2025 – March 2025
Worcester Polytechnic Institute — Worcester, MA
- Investigated the integrity of ethical claims in responses from various Large Language Models
- Produced a set of ethical dilemmas targeting different contradictory philosophical ideas to test the models

***Power of Code* Founder and Consultant** — Aug. 2022 – June 2024
New Milford High School — New Milford, CT
- Founded a high school Computer Science club to prepare students for the AP Computer Science A exam
- Tutored students one-on-one using Replit and CSAwesome's Java tools
- Represented the school in Lockheed Martin's annual Code Quest competition in 2023
- Consulted with the club after graduation, helping to organize activities and offer guidance remotely

TECHNICAL SKILLS

Languages: Python, C/C++, SQL (MySQL, PostgreSQL, SQLite), JavaScript, Java, R
Frameworks/Libraries: PyTorch, Scikit-learn, Flask, Node.js, Pandas, NumPy, Matplotlib
Machine/Deep Learning: CNNs, RNNs, Decision Trees, Random Forests, SVM, K-means clustering
Developer Tools: Git/Github, Docker, Hugging Face, Codex, Visual Studio Code, PyCharm, IntelliJ