Michael Capriotti

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Education

Northwestern University *2024 – 2028*
BA in Computer Science and Mathematics

Illinois Mathematics and Science Academy *2021 – 2024*
- **GPA:** 3.95/4.00
- **Coursework:** Differential Equations, Statistics, Calculus Based Mechanics/Electricity and Magnetism, Modern Physics, Physical Chemistry

Experience

Web Development Intern *Oswego, IL*
Hudson Design House *July 2024 – Present*
- Integrated WooCommerce and Square for e-commerce functionality
- Implemented secure mobile-friendly shopping cart systems
- Working on boosting search rankings by optimizing site structure

Academic Tutor *Remote*
Amikka Learning *May 2024 – Present*
- Tutor math, physics, and chemistry
- Assist students with SAT preparation

Quantum Computing Research Intern *Remote*
Los Alamos National Laboratory *Feb 2024 – Present*
- Semidefinite programming warmstarts for quantum algorithms
- Solving quadratic unconstrained combinatorial optimization problems
- Markowitz portfolio optimization simulated by geometric Brownian Motion

HVAC Technician Assistant *Bourbonnais, IL*
Cap's Electric and Refrigeration *June 2024 – Sept 2024*
- Installed/Repaired air conditioners, furnaces and ventilation pipes

Data Science Research Assistant *Evanston, IL*
Northwestern University - Kellogg School of Management *August 2022 – June 2024*
- Processed 1000+ obituary images using OCR
- Analyzed executive traits with ChatGPT
- Sorted data in Excel using Pandas

Programs

MIT Introduction to Technology, Engineering, and Science *Remote*
June 2023 – Dec 2023
- Selected from over 2,700 applicants
- Researched AI bias and nuclear fusion topics

Wharton - Essentials of Finance *Philadelphia, PA*
June 2023 – July 2023
- Learned personal and corporate finance
- Won 1st place in ESG Poster competition

Skills

Languages: Python
Technologies: Jupyter Notebook, Google Colab, Git, Visual Studio Code

Projects

QUBO To Ising   *Github* ↗

- Warm started QAOA (Quantum Approximate Optimization Algorithm) to solve QUBO (Quadriatic Unconstrained Binary Optimization) problems: Portfolio Optimization, Random QUBOs, Traveling Salesman, and Maximum Independent Sets
- Paper in the works
- **Tools Used:** Python, Qiskit, Matplotlib, Numpy

Executives Traits AI   *Github* ↗

- Created a method for extracting and analyzing data using ChatGPT (specifically used for processing data on executives)
- **Tools Used**: Python, Pyppeteer, Pandas, Openpyxl