

timothy moburg

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PROFILE

Solid background employing problem-solving strategies in the fields of computer science, mathematics, physics, and engineering.

Rich history collaborating with others to solve problems in a lab setting.

EDUCATION

Thomas Edison State University, Trenton, NJ
Bachelor of Arts, Mathematics – Expected May 2026

Coursework Completed:

- Introduction to Computer Science
- Algorithms & Data Structures
- Software Design & Development
- Database Management Systems
- Web Development
- Programming Languages
- Discrete Structures
- Error Correcting Codes
- Calculus I
- Calculus II
- Differential Equations
- Multivariable Calculus
- Real Analysis
- Applied Linear Algebra
- Theory of Probability
- Math of Machine Learning I
- Physics for Scientists & Engineers I
- Physics for Scientists & Engineers II
- Chemical Principals
- Statics & Dynamics
- Fundamentals of Electrical Engineering
- Thermal Sciences I
- Numerical Analysis I
- Math of Machine Learning II

PROJECTS

Neural Network

- Created a feedforward neural network from scratch that uses a stochastic gradient descent learning algorithm.
- Written in Python

Handwritten Math Classifier

- Reviewed the performance of various classifiers including the Support Vector Machine, k-Nearest Neighbor, Neural Network, and Convolutional Neural Network on the classification of 172 handwritten mathematical symbols from the HASYv2 dataset. Every method was optimized to achieve a testing accuracy above 84%.
- Written in Python

Chess Engine

- Created a basic chess engine that stores board states in memory using bitboards, enforces legal moves, and searches ahead using a minimax algorithm with alpha-beta pruning.
- Written in C++

Web Browser

- Created a browser that breaks down a simple webpage into tokens, parses the tokens into an abstract syntax tree, and then interprets and displays the tree's meaning.
- Written in Python

SKILLS

Languages

Python, C++, Java, PHP, SQL,
Javascript, OCaml, MATLAB

Operating Systems

Windows, Mac OS, Linux