# Thomas D. O'Connor

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## Education
UMass Lowell · Honors College · December 2024
BS Computer Science · Business Administration Minor
GPA: 3.76   [ Dean's List 6x, Chancellor's List 1x, Magna Cum Laude ]

## Skills and Tools
<u>Concentration</u>: **A.I.** · **Machine Learning** model development · Data Processing
<u>Languages</u>: C, C++, Python          <u>Software</u>: Github, MS Office, Tensorflow, Keras, Matplotlib
<u>Environments</u>: Windows, Linux       <u>Other</u>: HTML, CSS, Javascript, LaTeX, PHP, Java, SQL

## Professional Work Experience
<u>Machine Learning Research Assistant</u> (MSNEP Lab at UMass Lowell)          May 2024 - Present
- Developing machine learning models to simulate collective behavior in complex systems.
- Reviewing and augmenting machine learning models for graduate coursework.
- Developing reports with data visualizations for presentations to non-technical staff.

## Academic Projects
<u>Financial Analysis Software (FAS)</u> · Honors Capstone Project                          2024
- Built using HTML, CSS, Python, Keras/Tensorflow and Javascript.
- A Web App that processes historical financial data and algorithmically predicts potential investments using financial statement ratios.
- Neural Network predicting future stock prices trained on reported SEC filings.
- Full-Stack : API Interactivity · Data cleaning · Information pipelining · GUI design

<u>Algorithmic Image Recognition system</u> · Machine Learning · ML RA                2024-2025
- Built using Python and Keras, leveraging Convolutional Neural Networks.
- Processes images and classifies the contents as one of 10 potential classes in CIFAR-10.
- Adapted to classify malignancy of potential skin cancers with 75% classification accuracy.

<u>Zillow Listing - Lead Level SVM</u> · Artificial Intelligence                          Spring 2024
- Built using Python and SKLearn, leveraging Support Vector Classifiers (SVMs).
- Processes unstructured english descriptions of home listings in Flint Michigan to predict lead content in the running water of the homes.
- Natural Language Processing using Word2Vec. Feature extraction using regex search.

<u>Retro Games</u> · Personal                                              2023-2024
- Built in C++, emulates the classic design of arcade games from the 1980s.
- <u>Pong</u>: Features an axis-aligned-bounding-box collision system with a reflex-AI opponent.
- <u>Snake</u>: Implemented a latched physics engine with a Deque for the snake body.
- <u>Pacman</u>: Designed a frame-rate stabilized physics engine with AI opponents.
- <u>Blackjack</u>: Multiplayer, terminal-based card game developed as a basis for AI analysis.

## Related Courses
Artificial Intelligence & Machine Learning  [ Python, Tensorflow, Keras ]          Spring 2024
Internet of Things                          [ Android app dev, Integrated circuits ]       Fall 2024
Financial Management, Accounting, BIS   [ Access, Excel, Word, Powerpoint ]       2022-2023

## Additional Work Experience
CDL Shuttle Driver & Dispatcher · UMass Lowell Transportation, Lowell MA     Jan 2023 - Apr 2024
- Time management : Dynamically coordinated and maintained schedules with drivers.
- Communication : Corresponded with and directed both students and drivers.
- Customer service : Pleasantly managed student, staff and guest inquiries.

Line Cook, Prep Cook, Dishwasher · Il Camino, Leominster MA                May 2021 - Sept 2024
- Teamwork : Cooperated with multiple cooks to assemble components of various dishes.
- Performance under pressure : Excelled and troubleshooted in a high-stress environment.