

Cullen Anderson

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EDUCATION

University of Massachusetts Amherst

Amherst, MA

BS in Computer Science, BS in Pure Math

Expected: May 2025

- GPA: 3.83
- Relevant Coursework: Ongoing - Machine Learning (Python), Programming Methodology (JavaScript), Algorithms, Topology, Analysis I, Completed - Data Structures (Java), Theory Of Computation, Programming In C, Object Oriented Programming (Python), Statistics For CS, Abstract Algebra I, Calc 3, Linear Algebra

Stuyvesant High School

NY, NY

Stuyvesant Endorsed Diploma

September 2018 – June 2022

- SAT: 1550, AP Calculus BC: 5, AP Physics C - Mechanics: 5, AP Physics C - E&M: 5, AP Physics 1: 5, AP Chemistry: 5, AP World History: 5, AP US Gov & Pol: 5
- Activities: President of Machine Learning Club, Member Of Competitive Computing Club

EXPERIENCE

Researcher

July 2023 – Present

University Of Utah

Salt Lake City, UT

- Spearheading research on computationally efficient and practical robust statistics. Significantly reduced data size requirements for high dimensional data, with important use cases in AI/ML. Actively working towards publishing a paper.
- Independently taking the lead on project management, bypassing typical undergraduate expectations.
- Proficiently analyzing research papers, devising original algorithmic improvements, experimentally verifying and rigorously proving results.
- Built extensive experimental framework to generate data, test algorithms, and compare results using Python with numpy and matplotlib.
- Originally accepted as a summer REU student where I worked on campus for ten weeks and was funded by an NSF grant.

Research Assistant

January 2023 – May 2023

Initiative For Digital Public Infrastructure

Amherst, MA

- Led the development of a deduplication algorithm for Gobo, a social media aggregator combining Reddit, Twitter, and Mastodon into a unified platform with user-controlled algorithms.
- Utilized Python and social media APIs to create a comprehensive dataset from various social media posts.
- Designed and implemented complex duplicate detection rules in Python, ensuring accuracy and minimizing redundancy.
- Conducted extensive testing and validation of the algorithm.

Intern

March 2021 – February 2022

EPIC, Columbia University

NY, NY

- Analyzed interview data of Nobel Prize winning scientists and Olympic athletes in a small team. Leveraged data insights to develop scripts tailored for research purposes.
- Worked collaboratively to write and edit an intro film to EPIC's research. Worked under the supervision of founding director Dr. Xiaodong Lin and assistant director Dr. Daoquan Li.

Film Fellow

June 2021 – Jan. 2022

Ghetto Film School

NY, NY

- Demonstrated exceptional leadership by overseeing a film crew and successfully casting and directing actors to independently write, direct, and edit a film.
- Distinguished as one of 30 participants in a competitive, tuition-free film program. Successfully managed a rigorous schedule consisting of daily meetings during the summer and weekly meetings during the school year.

PROJECTS

Reddit Sentiment Analysis | *Python, Flask, Keras, Reddit API, HTML/CSS*

- Implemented a ML sentiment analysis model on a web application using Flask. The website allows users to perform sentiment analysis on Reddit Subreddits based on popular headlines.

Digit Recognizer Website | *Python, TensorFlow, NumPy, Pillow, Flask, JavaScript, HTML/CSS*

- Implemented neural network from scratch in NumPy and convolutional neural network using TensorFlow.
- Built image preprocessing pipeline using Pillow, allowing digits drawn on or submitted to the website to be identified.
- Built full-stack web interface using Flask, JavaScript, and HTML/CSS.

Velocity Selector Game | *JavaScript, HTML/CSS*

- Developed an online physics simulator game to teach students about the concepts of projectile motion, electric fields, and magnetic fields. The game consists of adjusting parameters to shoot a ball through an electric and magnetic field.

Stanford Machine Learning Coursera | *Python, Numpy, Tensorflow, Keras, Pandas, Matplotlib*

- Completed Coursera Stanford Machine Learning Course where I implemented several ML algorithms in Python. These algorithms include both supervised and unsupervised techniques such as: Neural Networks, Decision Trees, and K-Means Clustering.