Liam Sheldon

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Education

Massachusetts Institute of Technology

- GPA: 5.0/5.0
- Majors: Physics, Artificial Intelligence and Decision-Making
- Relevant coursework: Waves and Vibrations, Classical Mechanics 2, Advanced Physics 2, Mathematics for Computer Scienc

Harvard Secondary School

- Relevant coursework: Linear Algebra and Differential Equations

Brookline High School

- GPA: 4.0/4.0 | SAT: 1550
- Relevant coursework: AP Physics C: Mechanics, AP Physics C: Electricity and Magnetism, AP Calculus BC, Multivariable C

Technical Skills

- Python, GIT, Linux, Flask, Tensorflow, Keras, ROOT, HTML, CSS

Projects

Citadel 2024 Invitational Datathon

- Performed sentiment analysis on 5 different fast-food companies goals over 10 years
- Scraped and performed sentiment analysis on over 30000 state-wide laws over 10 years
- Analyzed correlation between commitment to healthier food and local/national obesity rates

Resume Generator (work in progress)

- Created an application to generate resumes based on field, work experience, and job type
- Fine-tuned an OpenAI model using 100 resumes to give more professional layouts and bullet points
- Improved usability by allowing users to describe experiences in full, standard English sentences

Sports Trading Bot

- Developed an interactive chatbot using OpenAI to give sports-trading advice and live information
- Used OddsAPI to gather live odds and prices and wrote trading algorithms to give users advice
- Marketed and deployed via Telegram and Discord to raise over $5000 in revenue

Physics Simulator

- Created a 2-D physics engine using Python and OpenGL to simulate 2 classic physics phenomena
- Incorporated advanced approximation techniques to simulate forces and collisions
- Adapted for use in a classroom to teach physics students both coding and physics concepts

Relevant Experience or Internships

MIT Heavy Ion Lab Researcher

- Evaluated and tested 20 cutting-edge machine-learning models on heavy-ion collision data
- Extracted trends in jets from over 1 million heavy-ion collisions using ROOT and C++
- Used extracted jet trends to improve model architecture using CERNs b-hive framework

MIT High Energy and Particle Physics Sector Researcher

- Examined inconsistencies between Monte Carlo simulations and real collision data from CERN
- Developed models using contrastive learning by training over 4 million data points in Tensorflow
- Reduced variances between datasets by 15-20% while maintaining performance at high levels

Hofstra University Bioengineering Materials Lab (BML)

- Developed an app to colorize black-and-white CT scans based on different types of tissue/material
- Used Python to extract raw information from DICOM files and allow users to customize colorization
- Converted the app into a user-friendly website and distributed it to practitioners and researchers

Leadership

- Phi Delta Theta - Treasurer, MIT Physics - TA, MIT Wellbeing Lab - Ambassador, BHS Physics - TA, BHS Student Researc