JACOB HOFFMAN

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Portfolio Website - https://jacobhoffman.tk

EDUCATION / COURSEWORK

- Student at Carnegie Mellon University.
- Teaching Assistant at Carnegie Mellon University.
- B.S. In ECE | May 2020
- M.S. In ECE | May 2021
- Dean's List Spring 2018

(18-461/661) Intro to Machine Learning For ECE (Graduate)
(15-410) Operating System Design And Implementation
(15-351) Algorithms and Advanced Data Structures
(18-491) Digital Signal Processing
(18-370) Fundamentals Of Control

WORK

- **CMU Dept. Of ECE | Teaching Assistant For (Graduate) Introduction To Machine Learning | Spring 2020**
  Taught graduate students fundamental machine learning techniques such as Linear Regression, Naïve Bayes, Logistic Regression, Multiclass Classification, SVMs, Nearest Neighbors, Decision Trees, Ensemble Methods, Neural Networks, Clustering, PCA, Online Learning, and Reinforcement Learning.

- **CMU Dept. Of ECE | Theoretical Machine Learning Researcher | Spring 2020**
  Invented and tested a novel data stream clustering method. The data stream clustering technique involved implementing multiple layers of data stream clustering with an activation like function between them. (Deep learning inspired)

- **General Motors | Embedded Controls Intern | Stability Of Vehicle | Summer of 2019**
  Applied control theory concepts to design a brake system for a trailer. The system included ABS and ESC safety features. The system detected instability of a trailer in real time and dampened trailer sway by engaging the brakes.

- **CMU Dept. Of ECE | Signals Researcher | Ultrasonic Positioning Systems | Summer of 2018**
  Worked on close range ultrasonic positioning systems for blind person navigation. Chirps, STFTs, and FFTs are some of the DSP concepts used to implement the system.

- **CMU ISR | Software/Data Researcher | Repository Bug Data Analysis | Summer of 2017**
  Data mined repository contributor bugs and inserted this data into MySQL databases. Performed statistical analysis on the data to determine coding practices that result in projects with harder to resolve bugs.

SKILLS

- Python | MATLAB | C | C# | Java | MySQL | JS | PHP | React | AWS | Azure | Heroku | NetLogo | Scheme

PROJECTS

- **Founder of Common Core Free By Robust Innovations Inc.**
  Partnered with CMU CS Professors David Kosbie and Mark Stehlik. Our educational software provides printable personalized math programming for students. Teachers print materials for a whole class with one click. After the teacher inputs grades, reinforcement learning performs the optimal action in designing the future materials for each student.

TRACK AND FIELD ACHIEVEMENTS

- Ran the 46th fastest indoor 300m time of 2016 in the U.S.A (35.16 Fully Automatic Time, Stuyvesant Grey Ducks)

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