

James A. Caudill

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LIFE MISSION

Research and develop artificial intelligence software and advise US policy on science and technology.

EDUCATION

California Polytechnic State University, San Luis Obispo, CA

Degree: **Computer Engineering, BS**

Graduated: **2017**

Overall GPA: **3.2**

Major GPA: **3.5**

SKILLS / INTERESTS

Programming Languages (*Proficiency: 0-9*): Python: **7** || C: **6** || SQL: **6** || C++: **5** || Java: **4** || PHP: **3**

Interests: Machine Learning, Data Science, AI Ethics, Government, Economics, Technical Writing

WORK EXPERIENCE

Jan 2018 - Current

Uber Advanced Technologies Group

Autonomy Test Analyst II

- Triaged autonomous truck failure modes and coordinated autonomy fixes for tracked bugs
- Created and led Truck Simulation Scenarios team which would build and run scenarios to test the current autonomy's capability in highway situations ranging from basic to near impossible
- Calculated and proposed systems engineering standards tests that would be considered gating sets for all new software, and would work with engineers to improve performance incrementally
- Developed scripting software to automate time consuming processes of clipping old logs, adding them to a set, then running updated software. Speeding the process by over 300%
- Led documentation efforts for the entire org, creating and managing a wiki of standard processes
- Active in employee resource groups to support women, elder engineers and those with disabilities
- Leveraged knowledge gained from building truck scenarios to improve car scenarios workflow

Jan 2014 - Oct 2016

Cal Poly ITS Network Administration

DNS Student Assistant

- Rewrote ten year old procedure manual to utilize java portlet created to optimize efficiency
- Managed large Cal Poly class B DNS through applications such as Alcatel Lucent VirtualQIP
- Gained knowledge in TCP/IP Protocols through work with both Cisco and Alcatel Lucent switches

PROJECT HIGHLIGHTS

Slither.IO Game AI

Personal Project

Spring 2017 - Spring 2018

- Programmed in python as a Deep-Q Reinforcement Learning agent playing Slither.io
- Used OpenCV for image preprocessing: thresholding, Hough Circles, findContours, and utilized contour moments for center of mass and area calculations to label the entire environment
- Utilized OpenAI Universe game framework with TensorFlow as the learning framework

Organization Disambiguation

Data Mining

Spring 2017

- Supported local political advocacy group Digital Democracy by grouping similarly named organizations using SciKit-Learn's DBScan unsupervised clustering machine learning algorithm
- Designed and implemented domain specific distance metric for clustering that cleared up noise in the 65,000 organization dataset and improved database search recall to 90%

Stock Market Sentiment Analysis

Artificial Intelligence

Spring 2016

- Lead of data processing team in charge of organizing members to quickly gather and format data
- Coded python list/dictionary comprehensions to efficiently sort and label 10 years of Twitter sentiment data and 15 years of stock price data on the Russell 2000 index
- Classified top ten features and built predictive model using KNN and random forests classification