

JOSHUA WILDING

I am an intellectually curious and analytically minded Data Scientist. I have always had a knack for numbers, having double majored in Math and Physics at Hamilton College in 2014. Upon graduation, I moved to Boston to work in actuarial consulting, where I got a taste of large scale data manipulation and statistical modeling. Now I am freshly graduated from General Assembly's full-time Data Science Immersive bootcamp, where I developed my technical expertise and honed my programming skills. I hope to continue my Data Science journey at a forward thinking, technology driven company where I can draw meaningful data conclusions and craft innovation business solutions.

CAPSTONE PROJECT

Automotive Image Recognition Neural Network

Purpose

Create a convolutional neural network model to classify images of cars.

Tools Used

Python, Pandas, PIL, Tensorflow, Keras, Amazon Web Services

Process

I trained a convolutional neural network model to look at images of cars and classify their bodystyle, make, model, and year, then output the exact vehicle type based on these characteristics. I utilized an existing dataset curated by Stanford University PhD students containing 16,185 unique images of cars, broken into 9 bodystyles, 48 makes, 157 models, and 16 years. To reduce the number of classes each neural network had to predict, I decided to train separate classifiers within each subclass and determine which neural network to use based on the prior classifier's prediction. In order to run my model, I set up an instance of a virtual GPU on Amazon Web Services, which resulted in faster training of the neural network. I trained the neural network in stages keeping an eye on accuracy and tweaking the model parameters when necessary.

Key Results

Unfortunately, I was only able to achieve a 30% accuracy score on bodystyle classification. A reason for this poor performance may have been the size of the dataset. It is possible that more images would be needed to account for the various angles, shadows, and lighting conditions in the photos. Overall, I believe this approach, with further work and improvement, could have potential applications in law enforcement, online marketing, and as a fun social app for car enthusiasts.

CONTACT ME

(201) 562-5351 | josh@wildinghome.com | [linkedin.com/joshuawilding](https://www.linkedin.com/in/joshuawilding) | joshuawilding.github.io