Max Wolf

Machine Learning Programmer

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Skills

Programming

I primarily program in Python, although I am familiar with C# and C++ as well.

AI

Pytorch, Keras, Tensorflow, mmDetection

OpenCV2

Experience

NinePointTwo Capital / Intern
07/2020 - 12/2021

I researched novel trading factors using deep learning and alternative data to find new ways of increasing return on investment in a futures trading portfolio, and delivered presentations on these new methods to company executives and customers. The methods I researched included using AI-based NLP to do sentiment analysis on data from Twitter and StockTwits, AI and rule-based NLP on SEC filings from various companies, and factor refinement using an LSTM network in combination with the new factors. I primarily used Tensorflow and Keras.

Revs Institute / Software Developer
09/2021 - 06/2022

I developed a working prototype of an AI-based system to accelerate library image cataloging, as well as data entry and image annotation software. My system used three models to extract race numbers from cars which would be matched to a database; one trained to detect the cars in an image, one to localize text location, and one to classify the text. The car detection model was FasterRCNN trained locally on my computer. Text localization and classification was done with CRAFT and SATRN. All three of these models were built and implemented with PyTorch. The data entry and image annotation software I developed both allowed library image cataloging to be done by a human with 20x more throughput per hour on average, as well as provided a simple and effective way to create more training data for the models with its built-in labeling features.

Education

Udacity / AI for Trading Nanodegree

12/2019 - 8/2020

An advanced course on applications of AI to quantitative finance. According to my mentor for this class, I was the youngest student to ever complete this course.

Other Projects

Electric Bike Conversion

A Tern Node D7i conversion I designed and built for my old AP US History teacher. The bike has a 3D printed drive pulley with CNC cut aluminum spokes, a 3D printed dashboard with an LCD display running custom software, and goes more than 20 miles on a charge cruising at 20 to 25 miles per hour.

Datalogging Rocket

A 5 foot tall, 1.5 kilogram rocket my classmate and I built for our 2020 Intermediate Engineering class final project. The rocket was an EZ-I65 airframe equipped with a payload bay, a Raspberry Pi (a single board computer running Linux), a custom PCB I designed to hold our sensors and connect them to the Raspberry Pi's GPIO pins, and an IMU, temperature, and altitude sensor. The rocket flew on an H283 high power composite fuel rocket motor making 73 pounds of thrust, and the launch earned me my NAR Junior Level 1 high power rocketry certification.