Matthew Maresca

Data Scientist

Summary

Curious, self-taught programmer with five years of experience building personal projects in python and javascript. Recognizing an opportunity to do meaningful work at a larger scale, took on the challenge of transitioning into the world of data science. Built foundational knowledge by completing MOOCs in linear algebra, multi-variable calculus, probability/statistics, computer architecture, algorithms, and machine learning prior to enrolling in the 12-week Metis Data Science Bootcamp.

Experience

Metis Data Science Bootcamp — New York, NY

Metis is a 12-week immersive data science bootcamp with a focus on python programming, machine learning, and statistical analysis. The full-time program is centered around building end-to-end real-world projects, from data acquisition to statistical modeling. See Project section below for examples.

Fit Ignition LLC — NY/NJ

Personal Fitness Trainer — 2011 to Current

Created fitness programs to meet specific needs of clients, with a focus on correcting postural distortions and faulty movement patterns. Identified a need to personalize each client's performance and progression; built a ReactJS/Python web app to measure client progress through personalized challenges, which enabled better optimization of training programs while giving clients a more concrete understanding of their progress.

Digital Business Consultant — 2011 to 2014

Business consulting projects with multiple dietitians. Redesigned and developed client websites. Worked to increase web traffic and performed A/B split tests to optimize websites for email list building and product sales. Assisted with online promotion for a major book launch, helping to build the author's web presence from scratch, including setting up Google Analytics to optimize the website based on visitor behavior. Partnered in the creation of an online nutritional program to complement a dietitian's book.

New York Sports Clubs — Newark, NJ

Personal Fitness Trainer — 2006 to 2010

Created fitness programs for individual clients, tracking progress with basic charts and spreadsheets. Sold personal training packages to gym members. Assisted in gym membership sales and customer service.

Projects

Image Classification

Classified a subset of 10 insect-related categories from the ImageNet dataset without neural nets. Achieved 43% accuracy using a bag of visual words pipeline with KMeans clustering and a Support Vector Classifier. Later extended project to utilize neural networks with all dense layers and then added in convolutional layers to demonstrate a progression in accuracy.

Data Science Resource Recommender (NLP)

Used natural language processing to recommend resources based on full-text inputs related to data science. The project used a TF-IDF vectorizer to determine most similar documents from a scraped corpus of blog posts.

Baseball Batting Average Predictor

Used linear regression to predict a baseball player's batting average using stats that are not heavily dependent on randomness. This project served as a proof of concept for deeper analysis, as it was able to predict batting averages better than simply using the previous season's batting average as the prediction. The model actually did not use previous batting average stats at all, as it falls in the randomness-dependent category.

Satellite Image Segmentation

Using Digital Globe satellite imagery in conjunction with Open Street Maps and QGIS, trained a Convolutional Neural Network to perform semantic segmentation, classifying farmland on a pixel-by-pixel basis. Used OSM to identify images with farmland and both OSM and QGIS to create ground truth masks.

Human Pose Estimation and Joint Motion Tracking — Current

Performed human pose estimation, locating human joints in images using a deep Convolutional Neural Network. Currently working on transferring the model to track joint motions in video.

Contact

mattmaresca@gmail.com
551-265-1953
North Arlington, NJ 07031
matt-maresca-347b6b22/
Mattymar

Education

Drew University
BA Economics

Skills

PROGRAMMING LANGUAGES

Python
Javascript (ReactJS, D3)

MACHINE LEARNING

Supervised Classification (SVM, Logistic Regression, Decision Trees)
Deep Networks (NN/CNN with Keras/TensorFlow)
Unsupervised (KMeans)
Natural Language Processing
Linear Regression
Scikit Learn

COMPUTER VISION

Image Classification
Semantic Image Segmentation
OpenCV
Pose Estimation

DATABASES

SQL (Postgresql)
NoSQL (MongoDB)

DATA ANALYSIS

Pandas
Numpy
Matplotlib
Web Scraping

CLOUD COMPUTING

Amazon Web Services
Google Cloud Platform