Daniel Simpson

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Professional Summary

- Trained as a mathematician in university, I discovered my passion for big data and machine learning algorithms after graduating. After a few years of self-learning I decided to pursue my MSc in Data Science and am now seeking a challenging position fully utilizing my skills in data science, data visualization and machine learning.

Technological Expertise

- Expertise using Python (Scikit-Learn, Keras, TensorFlow, Pandas, Matplotlib, Plotly, Dash, Seaborn, GeoPandas, SciPy, BeautifulSoup and NumPy), R, SQL, MATLAB and Microsoft Office.
- Specialization with Deep Learning and various other supervised and unsupervised machine learning techniques in Python and R (decision trees, artificial neural networks, clustering, SVM, random forests, regression analysis, Bayesian networks, and genetic algorithms).
- Experience with Google Cloud Platform, Azure, AWS, C++, JavaScript, HTML and Java.
- Knowledge of Git Control, Scrum, Unix commands and distributed computing.

Education

- **MSc *Data Science*** - Distinction
  Birkbeck, University of London, September 2020
  Dissertation was focused on deep learning by doing time-series analysis for stock price predictions using LSTM neural networks for modeling and evolutionary algorithms as an optimization technique.
- **BSc *Mathematics***
  West Virginia University, May 2013

Projects

- Covid-19 tracking dash app – Working with my old advisor, I designed a web app to track covid-19 within the United States on a county level. The Johns Hopkins repository was used for collecting the covid-19 data and was used in the calculations of the R-rate estimate of the virus. Pandas was used for collecting and cleaning the data, R-rate calculations were generated using the EpiEstim library within R, the dashboard was built using the dash and plotly libraries, and the website was hosted using Google Cloud Platform.
- Identifying business investments within London boroughs – Implemented the k-means clustering algorithm on demographic data, identifying similar boroughs within London. Once the clusters had been established each borough was compared to the cluster it fell within, identifying potential business venue opportunities. Demographic data was web scraped using BeautifulSoup and pandas, Scikit-learn was utilized for k-means, venue data was collected using the FourSquare API, and visuals were generated using matplotlib and folium libraries.
- Facial recognition and mask detection – This project takes in an image, identifies individual faces in the image, and feeds a cropped image of just the face into a CNN to identify whether the individual is wearing a mask or not. CV2 is utilized for facial recognition, while Keras and ImageNet are used to build the CNN for mask identification.
- Visualizing wages in the United States – Interactive visuals using data taken from the federal reserve bank of New York. Effects of the dot com boom, 2008 financial crisis, and covid-19 pandemic are all visualized and analyzed for their effect on the job market. Pandas and plotly were used for data analysis and visualization.

Employment History

Bryant High School, Alexandria, VA – Aug 2013 to Aug 2014 & Aug 2016 to Aug 2019

Mathematics Teacher

- Collected, cleaned, and presented student data directly to my principal quarterly.
- Designed Python projects focused on applied mathematics and programming basics.
- Managed an instructional assistant to help the classroom environment run smoothly.
- Presented and explained mathematical and statistical concepts to a wide variety of learners.
- Nominated for *Outstanding New Teacher* Award 2018.

ARP, Alexandria, VA – June 2014 to April 2015 & May 2016 to Aug 2019

Bartender and Server

- Communicated valuable information to management and kitchen staff constantly.
- Developed personal and professional relationships with patrons and staff alike.

The Learning Network, Surat Thani, Thailand – April 2015 to April 2016

Math and Science Teacher

- Explained mathematical and scientific concepts to young learners.
- Developed lesson plans for large class sizes of students who learned English as a second language.
- Curated yearlong projects with students and designed extracurricular activities for all age groups.

West Virginia University, Morgantown, WV – May 2010 to May 2013

Research Assistant

- Big data analysis on protein data modeling biological processes using Excel and MATLAB.
- Worked as part of a research team within a lab focused on flowcytometry research.
- Kept track of data and related lab information with various Microsoft Office tools.