# Daniel Simpson

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## PROFILE

Data mentor and coach for clients across multiple industries, helping develop their workforce to produce business-driven data insights. Strong interest in all aspects of data analytics from data visualisation to machine learning. Previous experience working in scientific research and as a mathematics, statistics and data science educator. Looking to transition into a data-driven organisation to leverage and develop existing skills in statistical modelling and machine learning to make a valued contribution to the business.

## KEY SKILLS

- Computer programming in Python, R, MATLAB and SQL languages.
- Additional experience using C++, JavaScript, HTML, CSS, Java, Git, Google Cloud Platform, Azure and AWS.
- Strong experience using specific packages such as Pandas, NumPy, Statsmodels, Scikit-Learn, Keras, TensorFlow, PyTorch, Matplotlib, Seaborn, Plotly, Dash, GeoPandas, SciPy, BeautifulSoup and Selenium.

## EDUCATION

**Birkbeck, University of London:** October 2020
Master of Science in Data Science - **Distinction**
**Modules:**

- Principles of Programming (Python)
- Big Data Analytics using R
- Computer Systems
- Data Science Techniques and Applications
- Information Systems
- Programming with Data (Python & SQL)
- Fundamentals of Computing
- Machine Learning

**Dissertation:** Deep learning techniques applied to time-series analysis for stock price predictions. LSTM neural networks were used for modelling and evolutionary algorithms were used as an optimization technique.

**West Virginia University:** May 2013
Bachelor of Science in Mathematics
**Recipient of The PROMISE Scholarship –** merit-based financial aid providing full cost of tuition and fees.

## DATA SCIENCE PROJECTS

Portfolio Website - https://danielbsimpson.github.io/

**Covid-19 Dashboard**

- Designed and created a dashboard app to track covid-19 within the United States.
- Worked with a university supervisor to collect data and calculate the r-rate within each county of the United States.
- Data preparation was done in Pandas and r-rate calculations were performed using the EpiEstim library within R.
- Dashboard created using Dash and Plotly, with the final product deployed using Google Cloud Platform.

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**Life Expectancy Inference from Global Metrics with OLS**

- Taking over 37 different features from countries around the world, the OLS stats model was used to infer the main contributing factors for life expectancy globally.
- OLS summary statistics helped drive the process by identifying statistically insignificant features with high p-values while monitoring the r-squared value to ensure model performance.
- Multiple methods were explored such as including polynomial features and running Lasso and Ridge regressions while observing the residual space to observe the performance of the various models.
- Statsmodels and sklearn were used for modelling, pandas and NumPy were used for data manipulation and matplotlib, seaborn and yellowbrick were used for visualisations.

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**Facial Recognition and Mask Detection**

- Developed a deep neural network to identify whether individuals in an image are wearing a face mask or not.
- Data was sourced from a data repository on Kaggle containing over 4000 images.
- OpenCV was used for facial detection, utilising Haar Cascade and Caffe methods.
- Keras and ImageNet were used to build the convolutional neural network for face mask recognition.
- Matplotlib was used to display the new image containing labelled boxes around individual faces, identifying whether the individual is wearing a face covering or not.

## CAREER HISTORY

**Decoded, London,** *Data Tutor* **June 2022 to Present**

- Working with the Product team to develop modules for the data apprenticeship and commercial curriculums.
- Running a learner help desk to address all technical questions related to work-based data-driven projects.
- Delivering data-focused workshops to upskill the workforce of various industry-leading clients.
- Helping develop a 16-month data engineering level 4 apprenticeship program.

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**Decoded, London,** *Senior Data Mentor* **May 2021 to June 2022**

- Working with clients such as UBS and TJX who wish to upskill their staff with python, SQL and machine learning.
- Coaching employees of all levels who want to acquire data science skills within the financial and retail sectors.
- Guiding learners to develop robust and impactful data science projects for their organisation.
- Mentoring learners on the best approaches for applications of data science within their industry.
- Developed automation tools internally to improve business communication with clients.
- Collaborating with the Product team to develop learner-facing content on high-level data techniques.

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**Bryant High School, Virginia,** *Mathematics Teacher* **August 2016 to August 2019**

- Collected, cleaned, and presented student data directly to the 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.
- Consistently met deadlines set by the county for student knowledge and lesson plan delivery.
- Nominated for *Outstanding New Teacher* Award 2018.

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**ARP, Virginia,** *Bartender and Server* **May 2016 to August 2019**

- Worked within a small team environment daily.
- Frequently communicated valuable information to management and staff.
- Led small teams during private events to ensure guest satisfaction.
- Developed personal and professional relationships with patrons and staff alike.

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**The Learning Network, Surat Thani, Thailand,** *Mathematics & Science Teacher* **April 2015 to April 2016**

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

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**Bryant ALC, Virginia,** *Instructional Assistant* **August 2013 to August 2014**

- Assisting in lesson plan delivery in the mathematics and biology classrooms.
- Helped manage large groups of problematic students to ensure a frictionless learning experience.
- Oversaw small group instruction for gifted learners.
- Provided one-on-one sessions for students of all levels.

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**West Virginia University, West Virginia,** *Research Assistant* **May 2010 to May 2013**

- Cleaned, processed, and analysed large amounts of data on proteins, modelling biological processes using Excel and MATLAB.
- Worked as part of a research team within a medical lab, focused on collecting data using flow cytometry techniques.
- Tracked various information surrounding the team's work, using Microsoft Office products for reporting purposes.