Durand D'souza

Full stack data scientist

A graduate with a Masters in Physics from the University of Leeds.
Passionate about using data and machine learning to improve society.
A quick learner with experience in all layers of a data analytics pipeline.

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Expertise & Skills

DATA VISUALISATION | MACHINE LEARNING | EXPLORATORY DATA ANALYSIS | HIGH-PERFORMANCE PROGRAMMING
STATISTICAL ANALYSIS | NATURAL LANGUAGE PROCESSING | FULL STACK WEB DEVELOPMENT
SCIENTIFIC ANALYSIS | CRITICAL THINKING | STRONG NUMERICAL SKILLS | FAST LEARNER
SPOKEN & WRITTEN COMMUNICATION | DETAILED RESEARCH & SUMMARISATION

Programming proficiency

PYTHON 12 YEARS | JAVASCRIPT 3 YEARS | R 3 YEARS | D3 2 YEARS | FORTRAN 2 YEARS
C/C++ 1 YEAR | SQL 1 YEAR | GO < 1 YEAR | JULIA < 1 YEAR

Work Experience

Data journalist & visualisation designer

Freelance

01/2017 - present — Nottingham, UK

I researched, designed, coded and wrote two interactive visual essays for The Pudding publication. These essays may be found under the titles: *"What 1.2 million parliamentary speeches can teach us about gender representation."* and *"We mapped out the road to gender parity in the House of Representatives"*.

- Worked with the 50:50 Parliament charity to make the articles more compelling and thought-provoking while remaining politically neutral.
- Taught myself complex machine learning pipelines and interactive data visualisation in javascript.
- Wrote web scrapers to collect data from various sources and used a number of techniques to clean and organise all the data.
- Used machine learning techniques such as LDA, POS tagging and T-SNE to identify broad topics within millions of parliamentary and congressional speech transcripts.
- Optimised code for limited memory use due to Big Data requirements.
- Created custom animated visualisations to encourage readers to explore the data themselves.

- Wrote a compelling story to tie together speech analyses and interactive visualisations.
- Designed a complete CSS style and article format from scratch with iterative design and user testing to perfect it.

Also developed several private visualisations for campaigners and have a number of articles to be published shortly.

PhD Student

Max Planck Insitute for Astrophysics

08/2013 - 04/2016 — Munich, Germany

My thesis work at the prestigious Max Planck Institute focused on modelling the evolution of stars much bigger than our Sun using theoretical astrophysics computational simulations. The eventual goal was to use my results to infer the interiors of stars in our galaxy using lightcurve observations from space telescopes.

- Improved decades-old FORTRAN computational code which solves first and second order differential equations.
- Created new custom visualisations using python to analyse computed models in detail
- Created new tools for myself and collaborators to manage simulation data and analyse it in detail in a modern environment.
- Aided colleagues working on related projects, especially with technical problems.
- Studied German to B1 proficiency.
- Gained certification in C/C++ programming.

While I eventually decided not to pursue a doctoral degree due to various factors, my time at MPA taught me a lot about perseverance in high-stress environments and about how to communicate complex technical problems in a succinct and productive manner.

Education

Integrated Masters in Physics with Astrophysics (MPhys) - 1st class

University of Leeds (2009-2013)

Economic Modelling & Environmental Economics

Self-taught (2016)

A Levels - 6 A*s, 4 As, 2 Bs

The Becket School (2007-2009)

Interests

Tackling climate change and inequality are two of my main focuses in life. I enjoy campaigning and educating people about these economic challenges through data. I also volunteered at Oxfam for several years and have helped out in campaigns against climate change.

I also enjoy hiking, climbing, cycling and skiing, landscape photography, cooking & hosting friends for dinner.