Derek **Fulton**

Student · Seeking Employment

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I am a motivated student with experience in data pipeline design, mathematical modeling, and data visualization in a number of programming languages. I am looking for a position that allows me to design, implement and optimize computational, data-driven approaches to tough problems in research and industry.

Education

University of Cambridge

Cambridge, UK

MPhil in Computational Biology

Oct 2018 - Sep 2019

- Accepted, starting in October 2018

UNC (University of North Carolina at Chapel Hill)

Chapel Hill, North Carolina, USA

B.S. in Quantitative Biology, Minor in Mathematics

Aug 2014 - PRESENT

- Honors College
- Cumulative GPA: 3.4

Experience

UNC Department of Biology (Dr. Kerry Bloom)

Chapel Hill, North Carolina, USA

Computational Biologist

May 2016 - PRESENT

- Worked with a team of biologists to develop better, more automated methods of data analysis that have accelerated the pace of research in the group dramatically
- Worked on Chromoshake, a mathematical model based on polymer physics (in **C++**)to simulate the molecular dynamics of the replication apparatus for budding yeast at the nanoscale based on data collected from analyzing images

University of Cambridge Department of Applied Mathematics and Theoretical Physics (Dr. Stephen Eglen)

Cambridge, UK

Summer Research Fellow

May 2017 - Aug 2017

- Built an online, interactive statistical explorer in **R** of neuroscience data to improve ease of collaboration among neuroscience researchers worldwide
- Created a series of Jupyter notebooks in **Julia** allowing the user to understand and visually interact with important differential equations modelling neuroscience phenomena

UNC Eschelman School of Pharmacy

Chapel Hill, North Carolina, USA

Undergraduate Researcher

Dec 2017 - PRESENT

- Buildling a superior protein-ligand pose scoring function with convolutional **neural network** using **Keras** with the hopes of dramatically accelerating the pace of computational drug discovery for researchers worldwide.
- Training the network on a dataset of 13,000 protein-ligand pairs (PDB Bind) with experimentally measured binding affinities.

Personal Projects

Swap Drop Enroll

Chapel Hill, North Carolina, USA

Creator

Jan 2016 - Jan 2017

- Created website and system that automatically enrolls UNC students into high-demand classes the instant a vacancy opens up
- Built frontend with **Flask**, backend with **MySQL** and **PhantomJS**
- Consulted for UNC Vice Chancellor of Information Technology by providing data on class demand

UNC Crime Explorer

Chapel Hill, North Carolina, USA

Creator

Aug 2017

- Created a user-facing website that offers a visualization of the UNC Crime Log (per the 1990 Clery Act)
- Allows query for location, date or crime type and also raw data download
- Strategized with Chapel Hill Police Department to combine their data with UNC Police Data to centralize open crime data in a more meaningful way for Chapel Hill students and residents

Honors and Awards

Boeing *Chapel Hill, NC, USA*

Boeing Innovation Fellow *May 2017*

- Won a 2,500 dollar award for ideating and presenting the concept of a smart waste bin that classifies food waste based on spectroscopy
- Pitched the concept to a panel of Boeing executives to receive feedback on economic and technical feasibility

Skills

- Fluent in Spanish, native in English
- Semi-professional musician in several instruments
- Competitive collegiate squash player

Miscellaneous

Satirist *Facebook Page*

Daily Tar Heel *Sep 2017 - Feb 2018*

- Wrote some hilarious bits for the greatest campus newspaper of all time, The Daily Tar Heel
- Also wrote some longer columns on serious campus issues