Derek Fulton

Mathematically-Driven Software Specialist

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Education

University of Cambridge — *Cambridge, UK*

Master's in Computational Biology — *Oct 2018 - Aug 2019*

- Coursework on machine learning, mathematical modeling, advanced statistics and optimization for complex scientific problems
- Relevant courses: Theory and Practice of Deep Learning, Bayesian Statistics, Computational Neuroscience

University of North Carolina at Chapel Hill — *Chapel Hill, NC, USA*

BSc in Quantitative Biology — *Aug 2014 - May 2018*

- Honors College
- Wrote a weekly humorous advice column for the campus newspaper, *The Daily Tar Heel* satirizing certain parts of the UNC student experience

Languages

Python, R, Unix, Julia, MATLAB, C++, JavaScript

Experience

SimpleBet — *New York, NY, USA*

Data Scientist and Software Engineer — *August 2019 - January 2020*

- Used **Python** modules **Sklearn**, **Pandas** to model various sports outcomes
- Managed remote datasets of sports events on **Amazon S3** and **SQL** servers in order to ensure the smooth operation of model training and deployment
- Relevant algorithms include **Neural Networks, Bayesian Inference, Random Forest, XGBoost, Logistic Regression**

University of Cambridge Department of Applied Mathematics and Theoretical Physics — *Cambridge, UK*

Summer Math Researcher — *May 2017 - Aug 2019*

- Analyzed 1TB of three-dimensional microscopy data of the developing zebrafish embryo
- Showed that different regions of the embryo display different patterns of cell mobility to achieve differing goals in early development
- Review my final applied mathematics project here: https://ddfulton.github.io/masters_thesis.pdf

Doran's Lab — *Raleigh, NC, USA*

Full-Stack Developer — *May 2018 - Aug 2018*

- Used **d3.js** to build interactive logistic regression for predicting winners of League of Legends, the world's most popular video game
- Used **t-SNE** to cluster groups of players and visualized the result in a dynamic web app
- Review my project here: https://doranslab.gg/tools/aram-win-predictor.html

Personal Projects

iClicker Attendance Solution — *Chapel Hill, NC, USA*

Hardware and Software Engineer — *March 2018 - June 2018*

- Used **Arduino** and radio transceiver to reverse engineer the iClicker, a radio frequency remote for in-class tests and quizzes meant to guarantee attendance
- Ultimately made lecture optional again by powering the **Arduino** with battery, enabling 24/7 preparedness for automatic poll responses based on the majority answer of the nearby iClickers

Swap Drop Enroll — *Chapel Hill, NC, USA*

Full-Stack Developer — *Jan 2016 - Jan 2017*

- Built a web app that auto-registers UNC students for popular classes the instant a vacancy opens up (**Flask** and **Digital Ocean**)
- Empowered the hundreds of UNC students who used Swap Drop Enroll to seize control of their education, leading them to pursue subject material they are most passionate about on their own schedules
- Brought on as a consultant to UNC registrar after involuntarily shutdown by UNC administration