

# 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 - PRESENT

- 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](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

