

# Derek Fulton

STUDENT · SEEKING EMPLOYMENT

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*I am a motivated student with experience in image processing, mathematical modeling, and data visualization. I am passionate about automation, math and the phrase "there's gotta be a better way to do this." I am looking for a position that allows me to design, implement and improve computational, data-driven approaches to tough problems in research and industry.*

## Education

### UNC (University of North Carolina at Chapel Hill)

Chapel Hill, NC, USA

B.S. IN QUANTITATIVE BIOLOGY, B.A. IN MATHEMATICS

Aug. 2014 - PRESENT

- Honors College
- Cumulative GPA: 3.4

## Experience

### UNC Department of Biology (Dr. Kerry Bloom)

Chapel Hill, NC, 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
- Currently working with convolutional **neural networks** to conduct the tracking and segmentation of proteins of interest in **fluorescence microscopy** images, allowing many analyses to be completely automated
- 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 Eglén)

Cambridge, United Kingdom

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

## Personal Projects

### Swap Drop Enroll

Chapel Hill, NC, 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 Database

Chapel Hill, NC, USA

CREATOR

Sep. 2010 - Oct. 2011

- Used **Python** to classify UNC's database of 30,000 crimes into zones and categories that hold meaning for UNC students (i.e. academic buildings, fraternity court, etc)
- Used **Node.js** with Google Maps API to publish this data visually

## 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