

# Richard Boeri Decal

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## Skills

+ denotes proficiency

**Languages** Python<sup>+</sup> · R · BASH · ECL · Español<sup>+</sup> · English<sup>+</sup> · Italiano  
**Tools** Tensorflow · Pandas<sup>+</sup> · Numpy<sup>+</sup> · PySpark · Hadoop · Scikit-learn · Matplotlib<sup>+</sup> · Tidyverse · SQL · MongoDB · HBase · HPCC  
**Passions** Travel, teaching, learning, social justice, my tiny home. Research interests: pedagogical chatbots, large-scale carbon sequestration, computational neuroscience.

## Experience

### Intern

*Allen Institute for Brain Science*

Seattle, WA

Summer 2018

- Proposed & designed a method for predicting neuron morphologies from microscopy data. Implemented a proof of concept. Working towards a full implementation and publication.

### Research Assistant

*Fairhall Lab, Dept. of Biophysics, Uni. of Washington*

Seattle, WA

2014 — 2016

- Developed dynamical agent-based models of mosquito thermonavigation. Optimized simulations using flight data from windtunnel experiments.

## Publications

Burman, Yu, Poole, **Decal**, Pallanck. "[Analysis of neural subtypes reveals selective mitochondrial dysfunction in dopaminergic neurons from parkin mutants](#)". *PNAS* 2012. 109(26):10438-43.  
Kunttas-Tatli, Zhou, Zimmerman, Molinar, Zhouzheng, Carter, Kapur, Cheatle, **Decal**, McCartney. "[Destruction Complex Function in the Wnt Signaling Pathway of Drosophila Requires Multiple Interactions Between Adenomatous Polyposis Coli 2 and Armadillo](#)". *Genetics* 2012. 190(3):1059-75.  
**Decal**. "Quantifying Small RNA Concentrations in *C. elegans*". Honors thesis. 2011.

## Selected Projects

**Profundo** Using deep reinforcement learning to automatically trace neuron morphologies.  
**PolceStops** Created a webapp to query and visualize the [Stanford Open Policing dataset](#).  
**Income Prediction** Predicted incomes using [California census data](#) based on 14 characteristics using feature engineering, support vector machines, and cross-validation.  
**Roboskeeter** Modelling mosquito heat-tracking behavior from windtunnel experiments.

## Education

**M.S. Data Science**, *New College of Florida*. Full tuition scholarship. Expected Dec. 2018  
**Artificial Intelligence Engineer Nanodegree**, *Udacity* 2017  
**B.A., Chemistry/Biology (Honors)**, *New College of Florida* 2011