

MC

# MATTHEW CHURGIN

SYSTEMS NEUROSCIENTIST | MATTCHURGIN.GITHUB.IO

## OBJECTIVE

I am a systems neuroscientist with a background in electrical engineering and image analysis seeking opportunities in biomedical data science.

## SKILLS

Python  
numpy  
scikit-learn  
pandas  
Matlab  
Unsupervised ML  
k-means  
PCA  
t-SNE  
Supervised ML  
regression  
classification  
Deep learning  
tensorflow/keras  
CNNs

## EXPERIENCE

### POSTDOCTORAL FELLOW • HARVARD UNIVERSITY • JUNE 2018-PRESENT

Built predictive models of fruit fly behavior from functional and structural neural imaging data

Developed image acquisition and analysis pipelines to automatically analyze 2-photon and confocal microscopy datasets

**Published** results in *PNAS*

**Secured** competitive NIH F32 funding (award DC018207, declined)

### PH.D. CANDIDATE • UNIVERSITY OF PENNSYLVANIA • JUNE 2012-AUGUST 2017

Pioneered hardware, software, and protocol development for high-throughput acquisition of *C. elegans* aging data

Enabled largescale gene/drug screening for healthspan modulators

Designed a CNC-imaging robot and behavioral analysis arenas to acquire individual and population behavioral data

Developed graphical user interface and backend software to analyze image data to extract individual and population aging parameters

**Published** first-author results in *eLife*, *Journal of Neuroscience*, *Nature Protocols*, *G3* and as middle-author in *Current Biology*, *eLife*, and others

## EDUCATION

### PH.D., BIOENGINEERING • AUGUST 2017 • UNIVERSITY OF PENNSYLVANIA

HHMI Interfaces Scholar, GPA (3.96/4.0)

Dissertation title: "Long-term imaging of *C. elegans* behavior and aging"

### B.S., ELECTRICAL ENGINEERING • MAY 2010 • UNIVERSITY OF DELAWARE

Honors Degree with Distinction, GPA (3.8/4.0)



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