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 data science.

SKILLS

Python
    numpy
    sklearn
    pandas
Matlab
    image/data analysis
    digital I/O
Unsupervised ML
    clustering
        k-means
        gaussian mixture models
    dimensionality reduction
        PCA
        t-SNE
Supervised ML
    regression/classification
        cross-validation
        hyperparameter tuning
Deep learning
    tensorflow/keras
    CNNs
Technical/grant writing

EXPERIENCE

- 2+ years leading teams of 2-3 people in results-driven scientific environment
- Proven success with publications in peer-reviewed journals *eLife*, *Nature Protocols*, *PNAS, Journal of Neuroscience,* and others
- Driving collaborations and developing bespoke software/hardware tools for end-user needs
- Teaching and mentoring young scientists in graduate, undergraduate, and middle school environments

POSTDOCTORAL FELLOW • HARVARD UNIVERSITY • 06/18 - 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 • 06/12-08/17
Pioneered hardware, software, and protocol development for high-throughput acquisition of *C. elegans* aging data

Designed and developed CNC-imaging robot and GUI to acquire individual and population behavioral data

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)

B.S., ELECTRICAL ENGINEERING • MAY 2010 • UNIVERSITY OF DELAWARE
Honors Degree with Distinction, GPA (3.8/4.0)

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