Tyler W A **Bradshaw**

Neurobiology PhD candidate

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About me

I am currently a Postdoctoral fellow in the **CoAx Lab** at Carnegie Mellon University (PI: Dr. Timothy Verstynen). My research focuses on synthesizing **cognitive algorithms** with biologically detailed **neural networks** to capture a more complete understanding of intelligent behavior. Seeing the benefits of the interdisciplinary approach, my recent efforts have turned towards embedding neural and cognitive dynamics in artificial agents to explore solutions to creating **safer and more flexible AI**. Moving forward, I am seeking positions (in academia or industry) where I can bring my knowledge and expertise to bear on interesting and important questions while continuing to learn and grow as a researcher and scientist.

Background

Postdoctoral Researcher — *Pittsburgh, PA*

Carnegie Mellon University — *2016 - PRESENT*

PhD in Cognitive Neuroscience — *Pittsburgh, PA*

Univ of Pittsburgh • Center for the Neural Basis of Cognition — *2011 - 2016*

BS in Neuroscience — *Omaha, NE*

Univ of Nebraska at Omaha — *2009 - 2011*

Languages

Python

Experience (1 year)

- Proficient in all major scientific and machine learning packages (SciPy, Numpy, Scikit-Learn, Pandas, etc.)
- Experience with runtime optimization packages such as Cython and Numba
- Working knowledge of the Jupyter Notebook and Jupyter Lab IDEs
- Use Github for maintaining, supporting, and contributing to open source projects

Secondary Languages

(Novice to Intermediate proficiency)

- **R** (1yrs), **BASH** (1yrs)

Projects

bgNetwork (Github)

Spiking neural network of Cortico-Basal Ganglia-Thalamic (CBGT) pathways

AZAD (Github)

Game-playing ANNs that use a stumbler-strategist architecture

Jupyter-Themes (Github)

Python package for customizing Jupyter Notebook themes

Bayesian cognitive modeling tutorial series — *Remote Contractor*

Georgia Institute of Technology — *Aug 2018 - Present*

- Developed and led a series of instructional tutorials to help guide novice statisticians and programmers through the basic theoretical foundations and applications of cognitive decision models (e.g., drift-diffusion model)
- Provided introduction to hierarchical Bayesian graphical modeling

Custom Jupyter interface for Safari — *Remote Contractor*

O'Reilly Media Inc — *June 2017 - July 2017*

- Worked with Andrew Odewahn (O'Reilly CTO) to develop a custom Jupyter Notebook theme for the Safari platform