Logan Cross

Curriculum Vitae

Education

2015 - Present **California Institute of Technology**

PhD. in Computation and Neural Systems

Thesis: *The Neural Mechanisms of Value Construction (in progress, estimated graduation: December 2020)*

Advisor: John P. O'Doherty

2011-2015 **University of Southern California**

B.S. in Neuroscience

Honors Thesis: *Classifying the Grateful Mind: Pattern Classification to Reveal Circuits for Value Judgment and Perspective Taking*

Advisor: Antonio Damasio

Research Experience

2015 – Present **Graduate Research Assistant**

Human Reward and Decision Making Laboratory

California Institute of Technology

Advisor: John P. O'Doherty, Co-advisor: Yisong Yue

2014 – 2015 **Undergraduate Research Assistant**

Brain and Creativity Institute

University of Southern California

Advisor: Antonio Damasio

2013 – 2014 **Undergraduate Research Assistant**

Neuroeconomics Laboratory

University of Southern California

Advisor: Giorgio Coricelli

2013 **Undergraduate Research Assistant**

Center for Applied Molecular Medicine

USC Keck School of Medicine

Advisor: Shannon Mumenthaler

Publications

2019   **Cross, L.**, Cockburn, J., Yue, Y., & O'Doherty, J.P. (Under Preparation). Combining deep reinforcement learning with fMRI to probe the encoding of state-space representations in the human brain.

2019   **Cross, L.**, Griggs, W., Webb, R., & O'Doherty, J.P. (Under Preparation). Examining the prefrontal cortex gradient in complexity and attribute representation during bundle valuation.

2017   Suzuki, S., **Cross, L.**, & O'Doherty, J. P. (2017). Elucidating the underlying components of food valuation in the human orbitofrontal cortex. Nature Neuroscience, 20(12), 1780.

Conference Presentations

2019   **Cross, L.**, Cockburn, J., Yue, Y., & O'Doherty, J.P. Combining deep reinforcement learning with fMRI to probe the encoding of state-space representations in the human brain. Poster presented at Reinforcement Learning Decision Making (RLDM), Montreal, Canada.

2018   **Cross, L.**, Cockburn, J., Yue, Y., & O'Doherty, J.P. Combining deep reinforcement learning with fMRI to probe the encoding of state-space representations in the human brain. Poster presented at Social and Affective Neuroscience Society (SANS), Brooklyn, New York.

2018   **Cross, L.**, Cockburn, J., Yue, Y., & O'Doherty, J.P. Combining deep reinforcement learning with fMRI to probe the encoding of state-space representations in the human brain. Poster presented at Computational and Systems Neuroscience (COSYNE), Denver, Colorado.

2014   **Cross, L.** How the brain looks on the bright side: Functional connectivity analyses during a cognitive reappraisal task. Selected for Annual National McNair Scholars Symposium, University of California Berkeley.

Honors, Awards, and Fellowships

2016-Present   NIH/NIDA Diversity Supplement fellowship (supports tuition and stipend)

2019   Diversity & Inclusion Travel Grant to attend ICML

2014   McNair Scholar

2014   McNair Scholars Program Award ($2,800)

2014   USC Student Opportunities for Academic Research Award ($1,000)

Technical Skills

Operating Systems   Mac OS; Linux – Ubuntu; Microsoft Windows

Languages   Python; MATLAB; R; Bash; C++

Machine Learning	TensorFlow; Keras; PyTorch; Fastai; Neon; Python - sklearn
Statistical/Bayesian Modeling	MATLAB; Stan; R; Python - pyStan, scipy, numpy
fMRI	SPM; FSL; ANTs; NiPy; Nipype; PyMVPA; The Decoding Toolbox
EEG	MATLAB – EEGLAB
Eyetracking	Eyelink
Stimuli Presentation	MATLAB – Psychtoolbox
Others	git; LaTeX; Overleaf; Adobe Illustrator, Inkscape, over 100 hours of MRI scanner operation

Teaching

2017-2019	Teaching Assistant – CNS 251: Human Brain Mapping: Theory and Practice
2018	Teaching Assistant – CNS 102: Brains, Minds, and Society

Organizations

2019-Present	Black in AI
2015-Present	Black Scientists and Engineers of Caltech

Web

Github	https://github.com/locross93/
LinkedIn	https://www.linkedin.com/in/logan-cross-55861979/