

# Nicholas Ketz

<http://psych.colorado.edu/~nike3851>  
[nick.ketz@gmail.com](mailto:nick.ketz@gmail.com)

## EDUCATION

### CU BOULDER

PHD PSYCHOLOGY, NEUROSCIENCE,  
AND COGNITIVE SCIENCE  
August 2016 | Boulder, CO  
Cum. GPA: 3.8

### UMN TWIN CITIES

BA IN PHYSICS  
May 2007 | Minneapolis, MN  
Minor in Psychology  
Cum. GPA: 3.6

## LINKS

Github:// [nickketz](#)  
LinkedIn:// [nickketz](#)  
Research Gate:// [Nicholas\\_Ketz](#)

## COURSEWORK

### GRADUATE

Machine Learning  
Deep Learning  
Reinforcement Learning  
Methods in Cognitive Science  
Neuro-Biology of Memory

### UNDERGRADUATE

Math Models of Human Behavior  
Quantum Physics  
C/C++  
Analytical Mechanics

## SKILLS

### PROGRAMMING

Frequent Use:  
BASH • Matlab • Python  
R • L<sup>A</sup>T<sub>E</sub>X

Infrequent Use:  
CSS • PHP • Perl • C++  
JavaScript • MySQL

### TEACHING/MENTORING

Manage multiple undergraduate research assistants  
Collaborated with CS student on her master's thesis

## OBJECTIVES

### UNDERSTANDING LEARNING AND MEMORY

- Interested in using behavioral and computational methods to understand the systems and algorithms behind learning and memory.
- Looking for applications of cognitive neuroscience research into real world scenarios and therapeutic applications

## RESEARCH EXPERIENCE

### HRL LABORATORIES Post-Doc

August 2016 - Present | Malibu, CA

- Closed-loop tDCS/tACS stimulation system for selective memory enhancement
- EEG biomarkers of memory replay and consolidation during waking and sleep
- New machine learning techniques based on human memory systems

### UNIVERSITY COLORADO AT BOULDER PHD STUDENT

September 2010 - Present | Boulder, CO

- Neural network simulations of high level cognition with Randy O'Reilly
- Behavioral and EEG study design and analysis with Tim Curran
- Worked on biologically constrained neural network models of human behavior and neuroimaging data

### NEW YORK UNIVERSITY RESEARCH ASSISTANT

September 2007 - Aug 2010 | New York, NY

- fMRI research into human memory with Lila Davachi
- Collaborated with graduate students to plan, execute and analyze fMRI studies
- Maintained lab's technology infrastructure and website

## SELECT PUBLICATIONS

### Neural Networks

Ketz, N., Morkonda, S. G. and O'Reilly, R. C. (2013). Theta Coordinated Error-Driven Learning in the Hippocampus. *PLoS Comput Biol* 9

Marsolek, C. J., Deason, R. G., Ketz, N. A., Ramanathan, P., Bernat, E. M., Steele, V. R., Patrick, C. J., Verfaellie, M. and Schnyer, D. M. (2010). Identifying objects impairs knowledge of other objects: a relearning explanation for the neural repetition effect. *Neuroimage* 49, 1919–1932

### NeuroImaging

Ketz, N., O'Reilly, R. C. and Curran, T. (2014). Classification aided analysis of oscillatory signatures in controlled retrieval. *NeuroImage* 85, 749–60

Tambini, A., Ketz, N. and Davachi, L. (2010). Enhanced brain correlations during rest are related to memory for recent experiences. *Neuron* 65, 280–290

## AWARDS

2016 Dosier Dissertation Award for Basic Research  
2011-2014 NSF Graduate Research Fellowship  
2012 David C. Rumelhart Travel Award