

Melina Tsitsiklis, PhD

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Highlights	I have worked as a Cognitive Neuroscientist for six years, conducting analyses of structured and unstructured data from multiple modalities, using signal processing and statistics, and communicating my results to wide audiences.	
Education	Columbia University 2014 – 2020 Ph.D., Neurobiology and Behavior (2020) M.A., M.Ph., Neurobiology and Behavior (2016, 2017)	
	Massachusetts Institute of Technology 2010 – 2014 B.Sc. in Biological Engineering Cumulative GPA: 4.7/5.0 Minor: Brain and Cognitive Sciences	
Academic and Professional Experience	Post-doctoral & PhD Researcher, Columbia University September 2015 – present <i>Post-doctoral and PhD research advised by Prof. Josh Jacobs</i> New York, NY <ul style="list-style-type: none">• Collected and analyzed time series data recorded from human neurosurgical patients; led to discovery of new ways in which spatial memories are processes and supported by the brain.• Developed pipelines to clean, preprocess, and integrate neural and behavioral data.• Used statistical and machine learning methods to analyze and interpret the neural and behavioral data (eg. hypothesis testing, linear regression, spectral analysis, dimensionality reduction).• Collaborated with multiple hospital sites to collect data, and communicated research findings to experts and non-experts.	
	Undergraduate Student Researcher, MIT June 2012– May 2014 <i>Advised by Prof. Susumu Tonegawa, Prof. Ed Boyden</i> Cambridge, MA <ul style="list-style-type: none">• Conducted mouse behavioral training and brain imaging, and characterized subsets of cell populations involved in memory processes using statistical methods (e.g. chi-squared test).• Analyzed mouse behavior and electrophysiology recording parameters in Matlab to optimize a single-cell recording system used with behaving mice.	
Skills	Programming: experienced: Python (NumPy, pandas, scikit-learn), Matlab; proficient: R, Bash scripting	
	Data analysis: Statistics, Hypothesis testing, Linear regression, Logistic regression, Supervised and unsupervised machine learning methods, Bootstrapping, Time series analysis, Power and phase spectral analysis (Morlet wavelet transform, Hilbert transform), Data visualization (Matplotlib, Affinity Designer)	
	Languages: English (native), Greek (fluent), Spanish (intermediate)	
Publications	M. Tsitsiklis et al. (2020). Single-neuron representations of spatial targets in humans. <i>Current Biology</i> . J. Miller, A. Watrous, M. Tsitsiklis, et al. (2018). Lateralized hippocampal oscillations underlie distinct aspects of human spatial memory and navigation. <i>Nature Communications</i> . J.C. McGowan, C. LaGamma, S.C. Lim, M. Tsitsiklis, et al. (2017). Prophylactic ketamine attenuates learned fear. <i>Neuropsychopharmacology</i> .	
Teaching, Volunteering	Electrophysiology of Human Memory & Navigation (BME4000) Spring 2018 <i>Teaching Assistant, Columbia University</i> <ul style="list-style-type: none">• Collaborated with Prof. Josh Jacobs and other TAs to plan and deliver lectures to a group of 20 undergraduate students.	
	Columbia University Neuroscience Outreach (CUNO) Fall 2015-Spring 2019 <i>Curriculum Development VP, Multi-visit VP</i> <ul style="list-style-type: none">• Coordinated and taught a multi-visit outreach program in which I taught a weekly hands-on neuroscience course at local middle schools.	