

Keiland W. Cooper

Graduate Scholar
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CV last updated April 24, 2021

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EDUCATION

University of California, Irvine

Ph.D., Neuroscience

Advisor: Dr. Norbert Fortin

In progress

Indiana University, Bloomington

B.S., Cognitive Science, *with Honors*

Computation specialization

Certificate in Neuroscience; Minor in Psychology

Advisors: Dr. Ehren Newman, Dr. Mike Jones

May 4th 2019

AWARDS

Graduate Research Fellowship (GRFP)	National Science Foundation	2021
DTEI Pedagogical Fellowship	UC Irvine	2020
UC Irvine Recruitment Fellowship	UC Irvine	2019
GRFP Honorable Mention	National Science Foundation	2018
Cognitive Science Outstanding Research	Indiana University	2019
Ewing Prize in Philosophy	Indiana University	2018
Outstanding Contribution in Cognitive Science	Indiana University	2018
Cognitive Science Research Project	Indiana University	2018
Cognitive Science Research Project	Indiana University	2017

PREPRINTS

- [11] Avalanche: an End-to-End Library for Continual Learning
Vincenzo Lomonaco, Lorenzo Pellegrini, Andrea Cossu, Antonio Carta, Gabriele Grafti, ... Keiland Cooper, ... Davide Bacciu, Davide Maltoni
(2021) arXiv preprint,
- [10] Hippocampal ensembles represent sequential relationships among discrete nonspatial events
Shahbaba, B., Li, L., Agostinelli, F., Saraf, M., Elias, G. A., Cooper, K. W., Baldi, P., Fortin, N. J.
(2021) Under Review,

THESIS

- [9] Cooper K. W. (2019) Cholinergic modulation may explain hippocampal encoding and retrieval mode switching. Indiana University, Bloomington Undergraduate Thesis.

REFEREED PUBLICATIONS

- [8] Recent smell loss is the best predictor of COVID-19 among individuals with recent respiratory symptoms.

Gerkin, R. C., Ohla, K., Veldhuizen, M. G., Joseph, P. V., Kelly, C. E., Bakke, A. J., ... Cooper, K.W. ... and Baguma, M.
(2021) Chemical senses,

- [7] Smell and taste changes are early indicators of the COVID-19 pandemic and political decision effectiveness.
Pierron, D., Pereda-Loth, V., Mantel, M., Moranges, M., Bignon, E., Alva, O., Cooper, K. W., ... Dinnella, C.
(2020) *Nature Communications*,
• #4 of Top 2020 *Nature Communications* papers
- [6] COVID-19 and the chemical senses: supporting players take center stage.
Cooper, K. W., Brann, D.H., Farruggia, M.C., Bhutani, S., Pellegrino, R., Tsukahara, T., Weinreb, C., Joseph, P.V., Larson, E.D., Parma, V. and Albers, M.W.
(2020) *Neuron*,
- [5] More than smell—COVID-19 is associated with severe impairment of smell, taste, and chemesthesis.
Parma, V., Ohla, K., Veldhuizen, M. G., Niv, M. Y., Kelly, C. E., Bakke, A. J., Cooper, K. W., ..., Hayes, J. E.
(2020) *Chemical Senses*,
- [4] Coronaviruses and the chemical senses: past, present, and future
Pellegrino, R., Cooper, K. W., Di Pizio, A., Joseph, P. V., Bhutani, S., and Parma, V.
(2020) *Chemical senses*,
- [3] Medial entorhinal cortex activates in a traveling wave in the rat
Hernandez-Perez, J. J., Cooper, K. W., Newman, E. L.
(2020) *eLife*,
- [2] Can the Machine Understand: An Evidence Based Approach to the Chinese Room
Cooper, K. W.
(2018) *IU Journal of Undergraduate Research*,

THESIS

- [1] Cooper K. W. (2019) Cholinergic modulation may explain hippocampal encoding and retrieval mode switching. Indiana University, Bloomington Undergraduate Thesis.

SELECTED ABSTRACTS + TALKS

- [7] Cooper, K. W., Shahbaba, B., Li, L., Agostinelli, F., Saraf, M., Elias, G. A., Bornstein, A., Baldi, P., Fortin, N. J. (2021). Hippocampal theta oscillations support nonspatial sequence coding in hippocampal neurons. *Society for Neuroscience Global Connectome*
- [6] Cooper K. W. (2020) The neuroscience / AI feedback loop: Catastrophic Forgetting and Sequences. *UCI AGS Symposium*
- [5] Cooper K. W. (2020) Dual processes of hippocampal mode switching. *Neuromatch Conference*
- [4] Cooper K. W. (2020) Cholinergic abolition disrupts encoding and retrieval mode switching. *11th Annual Emerging Scientists Symposium*
- [3] Hernandez J, Cooper K. W., Newman E.L. (2018) Is theta a traveling wave in the medial entorhinal cortex? Program No. 330.10. *Society for Neuroscience*

- [2] Cooper K. W, Dachapally P.R, Jones M.N (2018) Consequences of Catastrophic Forgetting on Semantic Representations Learned by Deep Neural Embedding Models, Midwest Cognitive Science Conference
- [1] Cooper K. W. (2017) Bridging the Gap: Natural Computation and Neural Systems. Indiana University Undergraduate Research Conference.

TEACHING	Autonomous Robotics	<i>Co-instructor</i>	<i>Indiana University</i>	2019
	Programming in Cognitive Sciences	<i>Co-instructor</i>	<i>Indiana University</i>	2018
	Mind, Memory, and the Brain	Teaching Assistant	<i>UC Irvine</i>	2021
	Neurobiology and Behavior Lab	Teaching Assistant	<i>UC Irvine</i>	2020
	Brain and Behavior	Teaching Assistant	<i>UC Irvine</i>	2020
	Cognitive Psychology	Teaching Assistant	<i>Indiana University</i>	2018
	Introduction to Neuroscience	Teaching Assistant	<i>Indiana University</i>	2017

NETWORKS	Cognitive Science Society	Psi Chi	ContinualAI (<i>co-founder</i>)
	Society for Neuroscience	Sigma Xi	Carboncopies Foundation
	Indiana Academy of Science	Sigma Alpha Pi	AI for People

SCI COMM + OUTREACH	AskANeuroscientist	<i>Founder; K-12 class Q/A (reached >400 students)</i>		
	Hoosier STARS	<i>Co-founder; K-12 class neuro demos (reached >300 students)</i>		
	CNLM Ambassadors	<i>Co-chair; SoCal Learning and memory outreach</i>		
	UCI End Racism	<i>Working group contributor addressing systemic racism</i>		
	Quora Writer	<i>Answers to neuroscience and AI questions; 800k+ views</i>		
	Peer reviewer	<i>Physiological Reviews; CVPR</i>		

TRAININGS + WORKSHOPS	Estes Cognitive Electrophysiology Workshop	University of Pennsylvania	2021
	NIH Grant Writing Workshop	UC Irvine	2020
	HHMI Productivity Workshop	UC Irvine	2020
	Nonlinear Dynamics: Math and Comp Approaches	Santa Fe Institute	2021
	Cognitive Science Outstanding Research Award	Indiana University	2021
	Ewing Prize in Philosophy	Indiana University	2021
	Cognitive Science Outstanding Research Award	Indiana University	2021

PRESS	[7] Cooper, K. W., Shahbaba, B., Li, L., Agostinelli, F., Saraf, M., Elias, G. A., Bornstein, A., Baldi, P., Fortin, N. J. (2021). Hippocampal theta oscillations support nonspatial sequence coding in hippocampal neurons. Society for Neuroscience Global Connectome			
	[6] Cooper K. W. (2020) The neuroscience / AI feedback loop: Catastrophic Forgetting and Sequences. UCI AGS Symposium			

- [5] Cooper K. W. (2020) Dual processes of hippocampal mode switching. Neuromatch Conference
 - [4] Cooper K. W. (2020) Cholinergic abolition disrupts encoding and retrieval mode switching. 11th Annual Emerging Scientists Symposium
 - [3] Hernandez J, Cooper K. W., Newman E.L. (2018) Is theta a traveling wave in the medial entorhinal cortex? Program No. 330.10. Society for Neuroscience
 - [2] Cooper K. W, Dachapally P.R, Jones M.N (2018) Consequences of Catastrophic Forgetting on Semantic Representations Learned by Deep Neural Embedding Models, Midwest Cognitive Science Conference
 - [1] Cooper K. W. (2017) Bridging the Gap: Natural Computation and Neural Systems. Indiana University Undergraduate Research Conference.
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ERDÖS N=4

as of 2021:

Paul Erdős → Noga Alon → Nicolò Cesa-Bianchi → Fabio Cuzzolin

as of 2019:

Paul Erdős → Ronald L. Graham → Feng Zhou → Michael J. Kahana → Ehren L. Newman