

# Keiland W. Cooper

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Graduate Scholar  
Department of Neurobiology and Behavior  
University of California, Irvine  
*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*

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## 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

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## PREPRINTS

- [10] 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,
- [9] 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,

## 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.*  
(2020) 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] Cholinergic modulation may explain hippocampal encoding and retrieval mode switching  
*Cooper K. W.*  
 (2019) *Indiana University, Bloomington Undergraduate Thesis*,

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#### SELECTED ABSTRACTS + TALKS

- [15] Hippocampal theta oscillations support nonspatial sequence coding in hippocampal neurons  
*Cooper, K. W., Shahbaba, B., Li, L., Agostinelli, F., Saraf, M., Elias, G. A., Bornstein, A., Baldi, P., Fortin, N. J.*  
 (2021) *SFN Global Connectome*
- [14] The neuroscience and AI feedback loop: Catastrophic Forgetting and Sequences  
*Cooper K. W.*  
 (2020) *UCI AGS Symposium*
- [13] The Art of Email  
*Cooper K. W.*  
 (2020) *UCI GPS-STEM*
- [12] Dual processes of hippocampal mode switching  
*Cooper K. W.*  
 (2020) *Neuromatch online Conference*

- [11] Continual Learning: neuroscience + AI.  
*Cooper K. W.*  
(2020) Contitua AI Meetup
- [10] Cholinergic abolition disrupts encoding and retrieval mode switching  
*Cooper K. W.*  
(2020) 11th Annual Emerging Scientists Symposium
- [9] The neuroscience amd AI feedback loop  
*Cooper K. W.*  
(2019) UCI Brain
- [8] On neuroscience and AI  
*Cooper K. W.*  
(2019) IUJUR Research Slam
- [7] Is theta a traveling wave in the medial entorhinal cortex?  
*Hernández J, Cooper K. W., Newman E.L.*  
(2018) Program No. 330.10. Society for Neuroscience
- [6] Consequences of Catastrophic Forgetting on Semantic Representations Learned by Deep Neural Embedding Models  
*Cooper K. W, Dachapally P.R, Jones M.N*  
(2018) Midwest CogSci  
• *Best poster award*
- [5] Is theta in the Medial Entorhinal Cortex a Traveling Wave?  
*Cooper K. W., Hernández J, Newman E.L.*  
(2018) Society for Neuroscience, Greater Indiana Chapter
- [4] 3D Brain Model Extraction and Virtual Applications  
*Cooper K. W.*  
(2018) (Panelist) Media School Graduate Association Conference
- [3] FlapAI: Genetically Evolved Neural Networks  
*Cooper K. W.*  
(2018) Midwest Undergraduate Cognitive Science Conference
- [2] Bridging the Gap: Natural Computation and Neural Systems  
*Cooper K. W.*  
(2017) Indiana University Undergraduate Research Conference
- [1] Downstream Hippocampal Activity Prediction with Neural Networks  
*Cooper K. W., Osborn Z.*  
(2016) Midwest Undergraduate Cognitive Science Conference

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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 Society for Neuroscience Indiana Academy of Science	Psi Chi Sigma Xi Sigma Alpha Pi	ContinualAI ( <i>co-founder</i> ) Carboncopies Foundation AI for People
SciCOMM + OUTREACH	AskANeuroscientist Hoosier STARS CNLM Ambassadors UCI End Racism Quora Writer Peer reviewer	<i>Founder; K-12 class Q/A (reached &gt;400 students)</i> <i>Co-founder; K-12 class neuro demos (reached &gt;300 students)</i> <i>Co-chair; SoCal Learning and memory outreach</i> <i>Working group contributor addressing systemic racism</i> <i>Answers to neuroscience and AI questions; 800k+ views</i> <i>Physiological Reviews; CVPR</i>	
TRAININGS + WORKSHOPS	Estes Cognitive Electrophysiology Workshop NIH Grant Writing Workshop HHMI Productivity Workshop Nonlinear Dynamics: Math and Comp Approaches Cognitive Science Outstanding Research Award Ewing Prize in Philosophy Cognitive Science Outstanding Research Award	University of Pennsylvania UC Irvine UC Irvine Santa Fe Institute Indiana University Indiana University Indiana University	2021 2020 2020 2021 2021 2021 2021
PRESS	<p>[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</p> <p>[6] Cooper K. W. (2020) The neuroscience / AI feedback loop: Catastrophic Forgetting and Sequences. UCI AGS Symposium</p> <p>[5] Cooper K. W. (2020) Dual processes of hippocampal mode switching. Neuromatch Conference</p> <p>[4] Cooper K. W. (2020) Cholinergic abolition disrupts encoding and retrieval mode switching. 11th Annual Emerging Scientists Symposium</p> <p>[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</p> <p>[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</p> <p>[1] Cooper K. W. (2017) Bridging the Gap: Natural Computation and Neural Systems. Indiana University Undergraduate Research Conference.</p>		

ERDÖS N=4

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*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