

Keiland W. Cooper

Graduate Scholar
Department of Neurobiology and Behavior
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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

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

PUBLISHED

- [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,

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) Continual AI Meetup

- [10] Cholinergic abolition disrupts encoding and retrieval mode switching
Cooper K. W.
(2020) 11th Annual Emerging Scientists Symposium
- [9] The neuroscience and 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

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 (co-founder)
	Society for Neuroscience	Sigma Xi	Carboncopies Foundation

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.

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