136D, Princeton Neuroscience Institute
Princeton, NJ 08540

Qihong Lu

✉ *qlu@princeton.edu*
qihongl.github.io

Education

2017-present **Ph.D., Psychology**, Princeton University.
Advisors: Ken Norman, Uri Hasson

2019 **M.A., Psychology**, Princeton University.

2013-2017 **B.S., Psychology & Mathematics**, University of Wisconsin-Madison.
Comprehensive Honors; Certificate in Computer Science
Advisor: Tim Rogers

Research Experience

2017-present **Princeton Computational Memory Lab**, Princeton University.
P.I.: Ken Norman

2017-present **Hasson Lab**, Princeton University.
P.I.: Uri Hasson

2014-2017 **Knowledge and Concepts Lab**, UW-Madison.
P.I.: Tim Rogers

Summer 2015 & 2016 **The Parallel Distributed Processing Lab**, Stanford University.
P.I.: Jay McClelland

2015 **Lupyan Lab**, UW-Madison.
P.I.: Gary Lupyan

2013-2015 **Language and Cognitive Neuroscience Lab**, UW-Madison.
P.I.: Maryellen MacDonald & Mark Seidenberg

Papers & Preprints

Kumar, M., Ellis, C. T., Lu, Q., Zhang, H., Capotă, M., Willke, T. L., Ramadge, P. J., Turk-Browne, N. B., Norman, K. A. (2020). BrainIAK tutorials: User-friendly learning materials for advanced fMRI analysis. PLoS Computational Biology, 16(1), e1007549.

Rogers, T. T., Cox, C., Lu, Q., Shimotake, A., Kikuch, T., Kunieda, T., Miyamoto, S., Takahashi, R., Ikeda, A., Matsumoto, R., Lambon Ralph, M. A. (2019). Evidence for a deep, distributed and dynamic semantic code in human ventral anterior temporal cortex. bioRxiv.

Chen, C., Lu, Q., Beukers, A., Baldassano, C., & Norman, K. A. (2019). Learning to Perform Role-Filler Binding with Schematic Knowledge. arXiv.

Lu, Q., Chen, P. H., Pillow, J. W., Ramadge, P. J., Norman, K. A., & Hasson, U. (2018). Shared Representational Geometry Across Neural Networks. Workshop on Integration of Deep Learning Theories, 32nd Conference on Neural Information Processing Systems Montréal, Canada.

McClelland, J. L., Mickey, K., Hansen, S., Yuan, X., & Lu, Q. (2016). A Parallel-Distributed

Processing Approach to Mathematical Cognition. Manuscript, Stanford University.

Conference talks

Lu, Q., Hasson, U., & Norman, K. A. (2020) Learning to use episodic memory for event prediction. Context and Episodic Memory Symposium.

Lu, Q., Hasson, U., & Norman, K. A. (2020) Learning when to recall. Neuromatch.

Conference Posters

Lu, Q., Fan, Z. Y., Hasson, U., Norman, K. A. (2019) Optimal Timing for Episodic Retrieval and Encoding for Event Understanding. The Conference on Cognitive Computational Neuroscience.

Lu, Q., Fan, Z. Y., Hasson, U., Norman, K. A. (2019) Patience is a virtue: A normative account of why waiting to encode and retrieve memories benefits event understanding. Poster presented at the Context and Episodic Memory Symposium.

Kumar, M., Ellis, C.T., Lu, Q., Zhang, H., Capotă, M., Willke, T.L., Ramadge, P.J., Turk-Browne, N.B., & Norman, K.A. (2019). BrainIAK tutorials: user-friendly learning materials for advanced fMRI analysis. Poster presented at The Organization for Human Brain Mapping Annual Meeting.

Lu, Q., Chen, P. H., Pillow, J. W., Ramadge, P. J., Norman, K. A., & Hasson, U. (2018). Shared Representational Geometry Across Neural Networks. Poster presented at the workshop on Integration of Deep Learning Theories, 32nd Conference on Neural Information Processing Systems.

Lu, Q., Hasson, U., & Norman, K. A. (2018). Modeling hippocampal-cortical dynamics during event processing. The Conference on Cognitive Computational Neuroscience.

Yu, J. Lu, Q., Hasson, U., Norman, K. A., & Pillow, J. W. (2018). Performance optimization is insufficient for building accurate models for neural representation. The Conference on Cognitive Computational Neuroscience.

Chen, C., Lu, Q., Beukers, A. Baldassano, C., & Norman, K.A. (2018). Generalized schema learning by neural networks. The Conference on Cognitive Computational Neuroscience.

Lu, Q., Ramadge, P., Norman, K. A. & Hasson, U. (2018). Measuring representational similarity across neural networks. Poster to be presented at the 40th Annual Meeting of the Cognitive Science Society.

Lu, Q., & Rogers, T. T. (2016). An interactive model accounts for both ultra-rapid superordinate classification and basic-level advantage in object recognition. Poster presented at the 38th Annual Meeting of the Cognitive Science Society.

Lu, Q., & McClelland, J. L. (2016). Teaching a neural network to count: reinforcement learning with "social scaffolding". Poster presented at the 15th Neural Computation and Psychology Workshop.

Cox, C. R., Lu, Q., & Rogers, T. T. (2015). Iterative Lasso: An even-handed approach to whole brain multivariate pattern analysis. Poster presented at the 22nd Cognitive Neuroscience Society annual conference.

Review

Journal	ReScience
Conference	Conference on Cognitive Computational Neuroscience, Conference on the Mathematical Theory of Deep Neural Networks

Teaching

Spring 2018, Spring 2020 — **TA**, NEU 350 Laboratory in Principles of Neuroscience.
Prof: Alan Gelperin & Anthony Ambrosini; 2-week fMRI lab; Princeton

Fall 2018 — **TA**, ELE|NEU|PSY 480 fMRI Decoding: Reading Minds Using Brain Scans.
Prof: Ken Norman & Peter Ramadge; Princeton

Spring 2019 — **TA**, NEU|PSY 330 Computational Modeling of Psychological Function.
Prof: Jon Cohen; Princeton

Jan 2019, Nov 2019 — **Lecturer**, Functional alignment for fMRI data.
Organizer: Manoj Kumar; BrainIAK workshop at Princeton

Research Mentoring

2017-2018 — Catherine Chen, Senior Thesis, Princeton. Learning the Schematic Structure of a World: Contextual Understanding of Stochastically Generated Stories in Neural Networks.

Summer 2018 — Noam Miller, Summer research, Princeton. Leabra7: A Python Software for Modeling Hippocampal-Cortical Interactions in Learning.

2018-2019 — Kathy Fan, Senior Thesis, Princeton. Learning When to Encode and Retrieve Episodic Memories with Memory-Augmented Neural Networks.

2020-present — Carson Wardell, Princeton. Learning to imagine new experiences: A computational model of the role of episodic memory in mental simulation

Service

2013-2014 — **Tutor**, Greater University Tutoring Service, UW-Madison.

2014-2017 — **Student representative**, Faculty Honors Committee, UW-Madison.

2018-present — **Organizer**, The Parallel Distributed Processing (PDP) meeting, Princeton.

2018-present — **Code review**, BrainIAK (Brain Imaging Analysis Kit), PNI-Intel collaboration.

2020 — **Co-organizer**, Conference on the Mathematical Theory of Deep Neural Networks.

Technical Skills

Python (pytorch), Matlab, R, Java, GitHub, Slurm, LaTeX

Honors & Awards

2018 — **Charles W. Lummis Scholarship**, Princeton.

2017 — **College of Letters & Science Dean's Prize**, UW-Madison.

2017 — **Undergraduate Academic Achievement Award**, UW-Madison.

2017 — **Outstanding Undergraduate Research Scholar Award**, UW-Madison.

2016 — **David H. Durra Scholarship**, UW-Madison.

2016 — **Undergraduate Travel Awards**, UW-Madison.

2015 — **Phi Beta Kappa as a junior**, UW-Madison.

2015 — **Hilldale Undergraduate Research Fellowship**, UW-Madison.

2015 **Bromley Research Conference Travel Grant**, UW-Madison.

2015 **CSLI Summer Research Internship**, Stanford.

2014, 2015 **Undergraduate Research Scholar Award**, UW-Madison.

2014 **International Undergraduate Writing Contest 3rd Place**, UW-Madison.

2014 **Margaret E. and Allard Smith Scholarship**, UW-Madison.

2014 **Welton Summer Sophomore Research Grant**, UW-Madison.