Ruidong Chen

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EDUCATION

2020 Ph.D., Neurobiology and Behavior, Cornell University, Ithaca, NY
2014 B.E., Computer Science, The University of Hong Kong, Hong Kong

PUBLICATIONS

[8] **Chen, R.**, Radkani, S., Valluru, N., Yoo, S.B.M., Jazayeri, M. (2026). Evidence accumulation from experience and observation in the cingulate cortex. Nature.

[7] Roeser, A.C., Teoh, H.K., **Chen, R.**, & Goldberg, J. H. (2023). The songbird lateral habenula projects to dopaminergic midbrain and is important for normal vocal development. eLife.

[6] **Chen, R.**, Gadagkar, V., Roeser, A. C., Puzerey, P. A., & Goldberg, J. H. (2021). Movement signaling in ventral pallidum and dopaminergic midbrain is gated by behavioral state in singing birds. Journal of Neurophysiology

[5] **Chen, R.**, & Goldberg, J. H. (2020). Actor-critic reinforcement learning in the songbird. Current Opinion in Neurobiology.

[4] **Chen, R.**, Puzerey, P., Roeser, A., Riccelli, T., Podury, A., Maher, K., Farhang, A., & Goldberg, J. (2019). Songbird Ventral Pallidum Sends Diverse Performance Error Signals to Dopaminergic Midbrain. Neuron.

[3] **Chen, R.**, Bollu, T., & Goldberg, J. (2018). A Stable Neural Code for Birdsong. Neuron.

[2] Murdoch, D., **Chen, R**., & Goldberg, J. (2018). Place preference and vocal learning rely on distinct reinforcers in songbirds. Scientific Reports.

[1] Gadagkar, V., Puzerey, P., **Chen, R**., Baird-Daniel, E., Farhang, A., & Goldberg, J. (2016). Dopamine Neurons Encode Performance Error in Singing Birds. Science.

RESEARCH EXPERIENCE

2024 Research Scientist, Laboratory of Mehrdad Jazayeri, MIT
2020 Postdoctoral Fellow, Laboratory of Mehrdad Jazayeri, MIT
2019 Grass Fellow, Marine Biological Laboratory
2014 Ph.D. student, Laboratory of Jesse Goldberg, Cornell University
2015 Rotation student, Laboratory of Melissa Warden, Cornell University
2013 Research assistant, Laboratory of Mark Nelson, University of Illinois

PRESENTATIONS

Talks

2024 Evidence integration from experience and observation in the cingulate cortex. *Simian Collective trainee talk.*
Evidence integration from experience and observation in the cingulate cortex. *Gordon research seminar on neurobiology of cognition.*
2023 Observational learning in the macaque brain. *SCSB Lunch Series*
2018 Songbird ventral basal ganglia sends performance error signals to dopaminergic midbrain. *Bird Song and Animal Communication*
The songbird ventral basal ganglia sends performance error signals to vocal motor cortex and dopaminergic midbrain. *Kavli Institute for Systems Neuroscience, NTNU*
Ventral basal ganglia sends performance error signals to VTA in singing birds. *Computational Neuroscience of Prediction*
The songbird ventral basal ganglia sends performance error signals to vocal motor cortex and dopaminergic midbrain. *European Birdsong Meeting*
2017 Basal forebrain sends performance error signals to VTA in singing birds. *Junior Scientist Workshop, Janelia Research Campus*

Posters

2023 Multi-agent evidence accumulation in the anterior cingulate cortex of monkeys. Society for Neuroscience
2022 A paradigm for one-shot learning from experience and observation in non-human primates. Society for Neuroscience
2019 Movement related activity in ventral pallidum and dopaminergic midbrain is gated by behavioral state. Society for Neuroscience
2018 The songbird ventral basal ganglia sends performance error signals to vocal motor cortex and dopaminergic midbrain. Cold Spring Harbor Symposium on Quantitative Biology
Ventral basal ganglia sends performance error signals to VTA in singing birds. COSYNE
2017 Songbirds implement multiobjective reinforcement learning with action-specific cost functions. Society for Neuroscience
The ventral basal ganglia sends performance error signals to VTA in singing birds. Society for Neuroscience

TEACHING EXPERIENCE

2016 Teaching Assistant, Introduction to Neurobiology, Cornell University

HONORS and AWARDS

2023 Simons Postdoctoral Fellowship

2021 J. Douglas Tan Postdoctoral Fellowship
2018 T&C Chen Fellowship stipend
FENS, IBRO-PERC and The Brain Prize stipend
2014 University Fellowship, Cornell University

PROFESSIONAL ACTIVITY

2026 Co-chair, Gordon Research Seminar on Neurobiology of Cognition
2023-present Chair, MIT BCS Postdoc Association Science Committee
2014-present Member, Society for Neuroscience

Ad-hoc reviewer: Science Advances, Neural Networks, Current Biology, COSYNE, PLOS Computational Biology, Nature Communications