

Angela Radulescu

email: angela.radulescu@mssm.edu

Academic Positions

- 2022 – *present* **Assistant Professor**
Departments of Psychiatry and Neuroscience, Icahn School of Medicine at Mt. Sinai (ISMMS)
Center for Computational Psychiatry
- 2020 – 2022 **Faculty Fellow/Assistant Professor**
Center for Data Science, New York University

Education

- 2014 – 2020 Ph.D. in Cognitive Psychology and Neuroscience
Princeton University
Advisers: Yael Niv, Nathaniel Daw
- 2007 – 2011 B.A. in Neuroscience and Behavior, Economics
Columbia University

Awards & Honors

- 2020 Schmidt Science Fellowship Finalist
- 2017 Travel Award, Reinforcement Learning and Decision Making (RLDM)
- 2017 Cognitive Science Graduate Fellowship, Princeton University
- 2017 Re-entry Fellowship, Prison Teaching Initiative at Princeton University
- 2015 Charlotte and Morris Tanenbaum *52 Fellowship, Princeton University
- 2014 Travel Award, Computational and Systems Neuroscience (Cosyne)
- 2013 Travel Award, Mechanisms of Motivation, Cognition and Aging Interactions
- 2011 Dean's List, Columbia University
- 2010 Summer Undergraduate Research Fellowship, Columbia University
- 2007 John Jay Scholar, Columbia University

Funding

- 2020 – 2023 Facebook Reality Labs, Cognitive Science Consortium Grant - Toward Rich User-World Predictive Interaction Models to Enable Human-Machine Collaboration (MPI)

Preprints [*: equal contribution, #: mentee]

- 2024 Chen Y, **Radulescu A**, Wu HZ. Unveiling the latent dynamics in social cognition with multi-agent inverse reinforcement learning. *bioRxiv*, 2024-10.
<https://www.biorxiv.org/content/10.1101/2024.10.09.617461v1.abstract>
- 2023 Zhu J, **Radulescu A**, Bennett D. Emotional overshadowing: pleasant and unpleasant cues overshadow neutral cues in human associative learning. <https://osf.io/preprints/psyarxiv/jekug>.
- 2022 **Radulescu A***, van Opheusden B*, Callaway F, Griffiths TL, Hillis JM. Modeling human eye movements during immersive visual search.
<https://www.biorxiv.org/content/10.1101/2022.12.01.518717v1>.
- Trach JE, deBettencourt MT, **Radulescu A**, McDougle SD. Reward prediction errors modulate attentional vigilance. <https://psyarxiv.com/c8zq7>
- 2020 **Radulescu A**, Holmes K, Niv Y. On the convergent validity of risk sensitivity measures.
<https://doi.org/10.31234/osf.io/qdhx4>

Journal Articles [*: equal contribution, #: mentee]

- 2023 Bennett D*, **Radulescu A***, Zorowitz S, Felso V, & Niv Y. Affect-congruent attention modulates generalized reward expectations. *PLOS Computational Biology*, 19(12), e1011707.
- 2023 Wise T, Emery K#, & **Radulescu A**. Naturalistic reinforcement learning. *Trends in Cognitive Sciences*.
- 2021 **Radulescu A**, Shin Y, Niv Y. Human Representation Learning. *Annual Review of Neuroscience*, 44.
- 2020 Daniel R, **Radulescu A**, Niv Y. Multidimensional probabilistic learning reveals impaired attentional control during reinforcement learning in older adults. *Journal of Neuroscience*, 40(5), 1084-1096.
- 2019 **Radulescu A**, Niv Y. State representation in mental illness. *Current opinion in neurobiology*, 55: 160-166.
- 2019 **Radulescu A**, Niv Y, Ballard IC. Holistic reinforcement learning: the role of structure and attention. *Trends in Cognitive Sciences*.
- 2017 Leong YC*, **Radulescu A***, Daniel R, DeWoskin V, Niv Y. Dynamic interaction between reinforcement learning and attention in multidimensional environments. *Neuron*. 93(2), 451-463.
- 2016 **Radulescu A**, Daniel R, Niv Y. The effects of aging on the interaction between reinforcement learning and attention. *Psychology and Aging*, 31(7), 747.
- 2016 Arkadir D, **Radulescu A**, Lubarr N, Raymond D, Bressman SB, Mazzoni P, Niv Y. *DYT1* dystonia increases risk taking in human. *eLife*, 5, e14155.
- 2015 Niv Y, Daniel R, Geana A, Gershman SJ, Leong Y, **Radulescu A**, Wilson RC. Reinforcement learning in multidimensional environments relies on attention mechanisms. *Journal of Neuroscience*, 35, 8145-8157.
- 2014 Gershman SJ, **Radulescu A**, Norman KA, Niv Y. Statistical computations underlying the dynamics of memory updating. *PLoS Computational Biology*, 10, e1003939.

Conference Proceedings [*: equal contribution, #: mentee]

- 2024 Maher C#, Qasim S, Nunez Martinez L, Saez I, **Radulescu A**. Intracranial recordings reveal neural encoding of attention-modulated reinforcement learning in humans. *Computational Cognitive Neuroscience (CCN)*, Boston, MA. [paper selected for a talk]
- 2024 Li J#, **Radulescu A**. A link between self-efficacy and optimistic overgeneralization. *Computational Cognitive Neuroscience (CCN)*, Boston, MA.
- 2024 Eckstein M, Miller KJ, **Radulescu A**. A Generative Grammar for Automatically Designing Experiments on Human Learning and Decision Making. *Computational Cognitive Neuroscience (CCN)*, Boston, MA.
- 2024 Li J#, **Radulescu A**. Dynamic self-efficacy as a computational mechanism of mania emergence. *Proceedings of the 46th Annual Conference of the Cognitive Science Society*.
- 2022 **Radulescu A**, Vong WK, Gureckis TM. Name that state: How language affects human reinforcement learning. *Proceedings of the 44th Annual Conference of the Cognitive Science Society*.
- 2020 **Radulescu A***, van Opheusden B*, Callaway F, Griffiths TL, Hillis JM. From heuristic to optimal models in naturalistic visual search. *Bridging AI and Cognitive Science workshop (BAICS), International Conference for Learning Representations (ICLR)*, Addis Ababa, Ethiopia (online). [paper selected for a talk, 4/63 acceptance rate]
- 2019 **Radulescu A**, Niv Y, Daw ND. A particle filtering account of selective attention during learning. *Computational Cognitive Neuroscience (CCN)*, Berlin, Germany.
- 2019 Davidson G#, **Radulescu A**, Niv Y. Contrasting the effects of prospective attention and retrospective decay in representation learning. *Reinforcement Learning and Decision Making (RLDM)*, Montreal, Canada.
- 2018 Davidson G#, **Radulescu A**, Niv Y. Passive forgetting or selective attention? Comparing two models of learning in multidimensional environments. *Computational Cognitive Neuroscience (CCN)*, Philadelphia, PA.
- 2017 **Radulescu A**, Leong YC, Niv Y. Reward sensitive attention dynamics during human reinforcement learning. *Computational Cognitive Neuroscience (CCN)*, New York, NY.
- 2017 **Radulescu A**, Leong YC, Niv Y. Reward sensitive attention dynamics during human reinforcement learning. *Reinforcement Learning and Decision Making (RLDM)*, Ann Arbor, MI. [paper selected for a talk]
- 2017 **Radulescu A**, Leong YC, Niv Y. Reward sensitive attention dynamics during human reinforcement learning. *Vision Sciences Society (VSS)*, St. Pete Beach, FL. [paper selected for a talk]
- 2017 Hitchcock P, **Radulescu A**, Niv Y, Sims C. Building on solid ground: establishing the stability of computational modeling parameters. In Hitchcock, P. (Chair), *Introducing Computational Clinical Science: New Techniques to Improve Methods, Theory, Diagnosis, and Prediction*. Symposium to be presented at *51st Annual Convention for the Association for Behavioral and Cognitive Therapies*, San Diego, California.

Commentaries

- 2021 **Radulescu A.** Can data include personal narrative? *NYU Center for Data Science blog*. [\[link\]](#)
- 2014 Niv Y, Langdon AJ, **Radulescu A.** A free-choice premium in the basal ganglia. (2014). *Trends in Cognitive Sciences*, 19(1), 4-5.

Conference Poster Presentations (*selected*) [*: equal contribution, #: mentee]

- 2024 Xie M#, Gu X, **Radulescu A.** Effects of attention and learning on mood dynamics. (2024). *Computational Psychiatry Conference*, Minneapolis, MN.
- 2023 Beltrán JM#, Mehta MM, Butler G, **Radulescu A**, Morris LS. Exploring the neural correlates of reward and punishment learning in depression using 7-Tesla MRI. (2023). *Computational Psychiatry Conference*, Dublin, Ireland.
- 2023 Li J#, **Radulescu A.** Dynamic self-efficacy updating as a computational mechanism of mania emergence. (2023). *Computational Psychiatry Conference*, Dublin, Ireland.
- 2022 Maher C#, Gu X, **Radulescu A**, Saez I. The neural basis of representation learning in the human prefrontal cortex. (2022). *Society for Neuroscience Annual Meeting*, San Diego, CA.
- 2018 **Radulescu A**, Niv Y. Separable attention processes constrain multidimensional reinforcement learning. (2018). *Society for Neuroscience Annual Meeting*, San Diego, CA.
- 2017 Bu J#, **Radulescu A**, Turk-Browne NB, Niv Y. Feature-based reward learning biases dimensional attention. (2017). *Vision Sciences Society (VSS)*, St. Pete Beach, FL.
- 2017 **Radulescu A**, Leong YC, Niv Y. Reward-sensitive attention dynamics during human reinforcement learning. (2017). *Computational Cognitive Neuroscience*, New York, NY.
- 2016 **Radulescu A**, Allefeld C, Schuck N, Haynes JD, Niv Y. Studying value-guided decision making through model-based multivariate fMRI analysis. (2016). *Society for Neuroeconomics*, Berlin, Germany.
- 2015 **Radulescu A**, Niv Y. Learning state representations from experience. (2015). *Machine Learning Summer School*, Tübingen, Germany.
- 2014 Arkadir D, **Radulescu A**, Lubarr N, Raymond D, Bressman SB, Mazzoni P, Niv Y. A link between corticostriatal plasticity and risk taking in humans. (2014). *Computational and Systems Neuroscience (Cosyne)*, Salt Lake City, UT. [presenting author]
- 2012 **Radulescu A**, Niv Y. Age-related differences in learning to selectively attend. (2012). *Society for Neuroscience Annual Meeting*, New Orleans, LA.

Invited Talks

- 2024 **Columbia University Seminar on Cognitive and Behavioral Neuroscience**
SUNY Downstate Behavioral and Neural Science Seminar
- 2023 **Max Planck UCL Center for Computational Psychiatry**
SfN Minisymposium: Generalization for Learning and Decision-Making
NIA Workshop on Computational Approaches to Advance Aging and AD/ADRD Research
Algorithms for Building and Structuring Internal Models, Park City Winter Conference
- 2022 **NSF/Simons NeuroDataScience Workshop, University of California, Irvine**
Maps in Reinforcement Learning RLDM Conference Workshop
NYU Center for Data Science, Women in Data Science Panel
Dartmouth College Cognitive Brown Bag
University of Chicago Department of Psychology Cognition Workshop
- 2021 **RLDM Meeting, Max Planck Institute, Tübingen, Germany**
University of California, Berkeley Department of Psychology
Department of Psychiatry, Icahn School of Medicine at Mt. Sinai
Shenhav Lab, Cognitive, Linguistic & Psychological Sciences, Brown University
- 2020 **Max Planck UCL Center for Computational Psychiatry**
Microsoft Research Seminar
MILA, Neural-AI Reading Group
- 2019 **New York University, Department of Psychology, ConCats Seminar**
Princeton Neuroscience Institute Retreat
Rutgers University, Cognitive Science Graduate Seminar
Tel Aviv University, Department of Psychology
- 2018 **Manhattan Area Memory Meeting**

Invited Workshops and Tutorials

- 2024 **SRDNA Computational Modeling Workshop.** Reinforcement learning tutorial
- 2024 **Computational Psychiatry Conference.** Reinforcement learning tutorial
- 2021 **FLUX Computational Modelling Workshop.** Computational models of human gaze data tutorial
- 2021 **Mental Effort Workshop.** Computational models of human gaze data tutorial

Teaching

- 2024 – **New York Computational Psychiatry Workshop** – founding co-director
- 2023 – **Modern Statistics for Modern Biology, ISMMS** – co-director
- 2022 – **Fundamentals of Computational Psychiatry, ISMMS** – founding co-director

2022 –	Selected Topics in Neuroscience , ISMMS – co-director
2021	Advanced Topics in Data Science , New York University – co-lead instructor
2018	Introduction to Cognitive Neuroscience , Princeton University – assistant instructor
2015 – 2019	Introduction to Psychology , Princeton Prison Teaching Initiative – instructor, team lead
2017	Introduction to Neuroscience , Columbia University High School Programs – instructor
2015	Developmental Psychology , Princeton University – instructor
2010	Thinking and Decision Making , Columbia University – teaching assistant

Mentoring

2023 –	Marjorie Xie (postdoctoral fellow, ISMMS)
2023 –	Jing Li (graduate student, neuroscience, ISMMS)
2022 –	Catherine Kim (research coordinator, ISMMS)
2022 –	Jackie Beltran (graduate student, neuroscience, ISMMS)
2022 – 2023	Itzel Martinez (MA student, neuroscience, ISMMS)
2021 –	Christina Maher (graduate student, neuroscience, ISMMS)
2021 – 2023	Kara Emery (postdoctoral fellow, NYU Center for Data Science)
2021	Sally Leung (NYU undergraduate independent research; MA student at Columbia)
2021	Praxal Patel (NYU Center for Data Science MA independent research)
2018	Guy Davidson (Princeton summer internship; graduate student at NYU Center for Data Science)
2017 – 2018	Julie Newman (Princeton undergraduate senior thesis; analyst at ClearView Healthcare)
2015 – 2017	Jennifer Bu (Princeton undergraduate senior thesis; medical student at UCSD)
2015	David Wang (Princeton summer internship; medical student at Stanford)

Thesis committees

2023 –	Jackie Beltran (ISMMS)
2023 –	Alessandra Yu (ISMMS)
2023 –	Matthew Schafer (ISMMS)
2023 –	Qixiu Fu (ISMMS)
2023 –	Nathan Tyler-Hall (UNC Chapel Hill)
2023 –	Alexandra Fink (ISMMS)
2023 –	Pushkala Jayaraman (ISMMS)

Ad-hoc Reviewer

ACM Symposium on Eye-tracking Research and Applications (ETRA) | Aging, Neuropsychology and Cognition | Biological Psychiatry | Cerebral Cortex | Cognition | Cognitive, Affective and Behavioral Neuroscience (CABN) | Collabra | Computational Cognitive Neuroscience (CCN) | Computational Systems Neuroscience (Cosyne) | Computational Psychiatry Conference (CPC) | Cognitive Science Society (CogSci) | Current Biology | Current Opinion in Behavioral Sciences | eLife | eNeuro | Journal of Mathematical Psychology | Journal of Neuroscience | Nature Communications | Nature Human Behavior | Neural Networks | Neurons, Behavior, Data Analysis, and Theory | PLoS Computational Biology | Psychonomic Bulletin & Review | Science | Scientific Reports

Service

2024 –	Icahn School of Medicine at Mt. Sinai , curriculum committee
2023 –	Computational Cognitive Neuroscience (CCN) , program committee, DEI chair

Summer Courses

- 2018 **Methods in Neuroscience at Dartmouth (MIND)**, Dartmouth University, Hanover, NH
2015 **Machine Learning Summer School (MLSS)**, MPI Tübingen, Germany

Research Positions

- 2019 – 2020 Ph.D. intern, Facebook Reality Labs; manager: James Hillis
2011 – 2014 Lab manager, Princeton Neuroscience Institute; adviser: Yael Niv
2010 – 2011 Undergraduate research assistant, Columbia University; adviser: Jacqueline Gottlieb
2009 Undergraduate research assistant, Columbia University; adviser: Elke Weber