ALEX NGUYEN

Email: qanguyen@princeton.edu

EDUCATION

Princeton Neuroscience Institute, Princeton, NJ *09/2020 - Present*
PhD in Neuroscience

Minerva University, San Francisco, CA *09/2015 - 05/2019*
B.Sc. in Physics and Data Science

EXPERIENCE

Polymathic AI *05/2025 - 08/2025*
Junior Research Scientist

Princeton Neuroscience Institute, Princeton University *09/2019 - 08/2020*
Research Specialist

Stanford University School of Engineering *06/2018 - 08/2018*
Research Intern

University of British Columbia Department of Physics *05/2017 - 08/2017*
Research Assistant

Stanford Artificial Intelligence Laboratory *05/2016 - 08/2016*
Research Assistant

TEACHING EXPERIENCE

Computational Neuroscience, Princeton University *01/2022 - 05/2022*
Graduate Assistant Instructor

Mathematical Tools for Neuroscience, Princeton University *09/2021 - 12/2021*
Graduate Assistant Instructor

LEADERSHIP AND AWARDS

- Canada Governor General's Academic Medal (2015)
- Britannia Gold Scholarship for Highest Achieving Scholar (2015)
- Ryerson University Undergraduate Summer Research Grant (2016)
- Canada National Science and Engineering Research Council Undergraduate Summer Research Awards (2017, 2018)
- Princeton Neuroscience Institute Recruitment Week Student Organizer (2022)
- Manhattan Area Memory Meeting Trainee Organizer (2022)

PUBLICATIONS

- **Alex Nguyen**, David J. Schwab, Vudtiwat Ngampruetikorn (2026). "Data coarse graining can improve model performance." Physical Review E 2026.
- **Alex Nguyen**, David J. Schwab, Vudtiwat Ngampruetikorn (2025). "Generalization vs. Specialization under Concept Shift." The Conference on Neural Information Processing Systems (NeurIPS) 2025.
- **Alex Nguyen**, Gautam Reddy (2024). "Differential learning kinetics govern the transition from memorization to generalization during in-context learning." The Thirteenth International Conference on Learning Representations. 2025 (*Spotlight Paper*).
- Victoria J.H. Ritvo, **Alex Nguyen**, Nicholas Turk-Browne, Kenneth A. Norman (2023). "Differentiation and Integration of Competing Memories: A Neural Network Model." eLife (Accepted as a Reviewed Preprint).
- Kailong Peng, Jeff Wammes, **Alex Nguyen**, Coraline R. Iordan, Kenneth A. Norman, Nicholas Turk-Browne (2024). Inducing representational change in the hippocampus through real-time neurofeedback. Philosophical Transactions B.
- Paul Scotti, Atmatdeep Banerjee, Jimmie Goode, Stepan Shabalin, **Alex Nguyen**, Ethan Cohen, Tanishq Mathew Abraham. (2023). Reconstructing the Mind's Eye: fMRI-to-Image with Contrastive Learning and Diffusion Priors. Advances in Neural Information Processing Systems (2023).
- **Alex Nguyen**, Kiel Howe (2019). "Learning Renormalization with a Convolutional Neural Network." Machine Learning and the Physical Sciences. Workshop at the 33rd Conference on Neural Information Processing Systems (NeurIPS).

TALKS, CONFERENCE PRESENTATIONS

- **Alex Nguyen**, Gautam Reddy (2024). "Differential learning kinetics govern the transition from memorization to generalization during in-context learning." Talk presented at Séminaire Sierra, INRIA. 2026.
- **Alex Nguyen**, David J. Schwab, Vudtiwat Ngampruetikorn (2024). "Generalization vs. Specialization under Concept Shift." Poster presented at Scientific Methods for Understanding Deep Learning, a Workshop at the Conference on Neural Information Processing Systems (NeurIPS).
- Victoria J.H. Ritvo, **Alex Nguyen**, Nicholas Turk-Browne, Kenneth A. Norman (2022). "Differentiation and Integration of Competing Memories: A Neural Network Model." Poster presented at the 18th Annual Context and Episodic Memory Symposium, Philadelphia, PA.