

# Alex Gordienko | Curriculum Vitae

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## Education

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- Aug 2023 – Present **Doctor of Philosophy at the University of Pennsylvania**  
Computational Cognitive Neuroscience, studying learning and memory in the Computational Cognitive Neuroscience Lab under the supervision of Dr. Anna Schapiro. Advanced to candidacy in 2026; expected completion 2028.
- Aug 2023 – May 2025 **Master of Arts at the University of Pennsylvania**  
Computational Cognitive Neuroscience Lab. Masters work on relating hippocampal anatomy to the learning of general and specific information with intra-hippocampal diffusion tensor imaging.
- Sept 2017 – Apr 2021 **Honours Bachelor of Science at the University of Toronto**  
Majors: Neuroscience and Cognitive Science (Computational Cognition Stream); Minor: Computer Science.

## Academic Employment

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- June 2021 – June 2023 **Lab Manager and Research Scientist Assistant at the Preston Lab**  
Alongside lab administration, I contributed to numerous lab projects by collecting behavioural and neuroimaging data, coding and testing experimental software built with Unity3D, and analyzing project data. During my work at the Preston lab I've achieved full scanner certification on the Siemens 3T Skyra and improved lab operations through my scripting and technical knowledge.  
[clm.utexas.edu/preston/](http://clm.utexas.edu/preston/)
- Feb 2018 – May 2021 **Lab Programmer and Research Assistant at the Duncan Memory Lab**  
Developed OpenMaze, an open-source Unity3D toolbox for building virtual navigation experiments without writing code, alongside supporting C# and Python tooling. Also recruited and ran study participants. Began as a volunteer position before moving into a paid role.  
[duncanlab.org/](http://duncanlab.org/)

## Publications

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### *Peer-Reviewed Articles*

- 2022 Alsbury-Nealy, K., Wang, H., Howarth, C., **Gordienko, A.**, Schlichting, M. L. & Duncan, K. D. (2022). OpenMaze: An open-source toolbox for creating virtual navigation experiments. Behavior Research Methods, 54(3), 1374–1387. <https://doi.org/10.3758/s13428-021-01664-9>

## Conference Posters

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May 29, 2025

### **Category learning drives neural repulsion initially but integration at a delay**

Marlie C. Tandoc, Sarah H. Solomon, Ashley B. Williams, **Alex Gordienko**, Jacob A. Parker, Anna C. Schapiro

Poster at Cognitive Neuroscience Society Meeting. fMRI study looking at the learning of general and specific information in a category learning task immediately following learning and after consolidation.

[alexgordienko.com/slides/category-learning-drives-neural-repulsion-initially-but-integration-at-a-delay](http://alexgordienko.com/slides/category-learning-drives-neural-repulsion-initially-but-integration-at-a-delay)

March 21, 2024

### **The Development of Contextual Learning and Inference**

Andrei Amatuni, Nicole L. Varga, **Alex Gordienko**, Omer Ashmaig, Neal W. Morton, Alison R. Preston

Poster at Cognitive Development Society 2024.

[alexgordienko.com/slides/the-development-of-contextual-learning-and-inference](http://alexgordienko.com/slides/the-development-of-contextual-learning-and-inference)

April 23, 2022

### **Minimizing Stimulus Variability in Episodic Memory Tasks: The Object Memorability Image Normed Database Software (O-MINDS)**

Hyuna Cho, Sarah Berger, **Alex Gordienko**, Katherine Duncan

Poster at Cognitive Neuroscience Society Meeting 2022

[alexgordienko.com/slides/minimizing-stimulus-variability-in-episodic-memory-tasks-the-object-memorability-image-normed-database-software-o-minds](http://alexgordienko.com/slides/minimizing-stimulus-variability-in-episodic-memory-tasks-the-object-memorability-image-normed-database-software-o-minds)

April 2, 2021

### **Computational Neural Network Model of Cholinergic Activity in the Hippocampus**

**Alex Gordienko**, Ariana Youm, Katherine Duncan

Undergraduate Research Conference at the University of Toronto: Biologically based neural network model of the hippocampus modified to simulate acetylcholine's impact on memory.

[alexgordienko.com/slides/computational-neural-network-model-of-cholinergic-activity-in-the-hippocampus](http://alexgordienko.com/slides/computational-neural-network-model-of-cholinergic-activity-in-the-hippocampus)

## **Invited Talks**

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April 23, 2026

### **Method - Resolving the Mechanisms of Associative Inference in the Human Hippocampus**

**Alex Gordienko**, Anna C. Schapiro

Computational Neuroscience Initiative +/- Graduate Student Talk Series - Week 2

[alexgordienko.com/slides/method-resolving-the-mechanisms-of-associative-inference-in-the-human-hippocampus](http://alexgordienko.com/slides/method-resolving-the-mechanisms-of-associative-inference-in-the-human-hippocampus)

April 16, 2026

### **Theory - Resolving the Mechanisms of Associative Inference in the Human Hippocampus**

**Alex Gordienko**, Anna C. Schapiro

Computational Neuroscience Initiative +/- Graduate Student Talk Series - Week 1

[alexgordienko.com/slides/theory-resolving-the-mechanisms-of-associative-inference-in-the-human-hippocampus](http://alexgordienko.com/slides/theory-resolving-the-mechanisms-of-associative-inference-in-the-human-hippocampus)

May 31, 2024

### **Probabilistic inference of latent causes develops through adolescence**

Andrei Amatuni, Nicole L. Varga, **Alex Gordienko**, Omer Ashmaig, Neal W Morton, Alison R. Preston

Context and Episodic Memory Symposium 2024

## Grants

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2026

### **MindCORE Neuroimaging Pilot Grant**

Grant awarded to pilot a novel associative inference study at the MindCORE Scanning Center. Award value of \$6,250.

## Teaching

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Jan 2025 – May 2025

### **PSYC 1230 Teaching Assistant - Cognitive Neuroscience**

Teaching assistant for Dr. Michael Arcaro's Cognitive Neuroscience course. This course provides an overview of the major fields of cognitive neuroscience, surveying the different major brain areas and current research concerning them. In this class, I assist with course administration, grade exams, labs, and quizzes, and hold office hours.

Aug 2024 – Dec 2024

### **PSYC 1340 Teaching Assistant - Perception**

Teaching assistant for the University of Pennsylvania's Perception course. I taught weekly recitations covering the perceptual systems and the mechanisms of sensory transduction, and held office hours.

Sept 2020 – Dec 2020

### **COG260 Teaching Assistant - Data, Computation, and the Mind**

Teaching assistant for the University of Toronto's introduction to computational approaches in cognitive science, supporting students through the course's programming and data-analysis assignments.

## Open Source

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2021 – 2022

### **Object Memorability Image Normed Database Software**

Open source normed object dataset made accessible through a desktop electron application users can install.

2020 – 2021

### **Dataset Creation Tool for Emergent Models**

A browser tool for hand-authoring TSV datasets for the Emergent neural simulation framework (used here for hippocampal modeling). Click cells in the pattern grids to set activations, then export a .tsv whose layout matches Emergent's tensor-column format.

2020 – 2021

### **hip-ACH**

A biologically-based neural network model of the hippocampus used to explore how acetylcholine shifts the balance between encoding and retrieval.

2018 – 2021

### **OpenMaze**

An open-source Unity3D toolbox that lets researchers build virtual navigation experiments without writing code, published in Behavior Research Methods.

## Certifications

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July 2025

### **Level 1 and Level 2 Certification on Siemens MAGNETOM 3T Cima.X with Gemini Gradients**

MindCORE Research Scanner Operator certification at University of Pennsylvania

June 2022 – June 2023

### **Level 1 and Level 2 Certification on Siemens MAGNETOM 3T Skyra, Prisma, and Vida**

University of Texas at Austin Scan Center with certification for both the research scanner (before and after the upgrade from the Skyra to the Prisma) as well as the med school scanner (Vida).

## **Service**

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Aug 2025 – Present

### **Graduate Resident Assistant at Harrison College House**

Fulfilled the duties of a GRA at Harrison and exceeded expectations across a number of metrics. Fostered community and furthered personal development of undergraduates on the college house floor.

Aug 2024 – Aug 2025

### **Graduate Student Representative**

Volunteer position to promote graduate student development and wellbeing in the Psychology Graduate Group at the University of Pennsylvania. Worked with admin and the Director of Graduate Studies on improvements to the major grad student milestones. Planned for and hosted prospective graduate students in the spring.

February 2018

### **Conference Volunteer at UTISM 2018 - The Cognitive Science of Disruption**

Volunteered at the University of Toronto Interdisciplinary Symposium on the Mind, supporting speakers and delegates across the day's sessions.