

Mohammad Dastgheib

PhD Candidate in Psychology and Cognitive Neuroscience

Last Updated: September 2, 2025

I am a Cognitive Neuroscience PhD Candidate who quantifies human perception and decision-making. I specialize in computational modeling (DDM, psychometric functions) and physiological measures (pupillometry) to objectively assess cognitive load and user behavior. With a proven ability to lead collaborative, multi-institutional research, I translate complex data into actionable insights for both academic publications and real-world applications.

Education

- 2021–Present **PhD Candidate, Psychology**, *University of California-Riverside*, Riverside, CA
Preliminary thesis: 'How Locus Coeruleus Integrity in Older Adults Mediates Perceptual Processes?'
Supervisors: Aaron R. Seitz, PhD (Northeastern University); Ilana J. Bennett, PhD (UC Riverside)
GPA: 3.93
- 2017 – 2020 **M.Sc., Psychology**, *Queen's University*, Kingston, ON
Thesis: 'The Effects of Self-Guided Meditation and Napping on Memory Consolidation in Humans'
Supervisor: Hans C. Dringenberg, PhD
GPA: 3.83
- 2013 – 2017 **Hon. B.Sc., Biological Sciences & Psychology**, *York University*, Toronto, ON, Double major
Thesis: 'Are Older Adults' Attitudes about Aging Influenced by a Psychoeducational Program?'
Supervisors: Jill B. Rich, PhD, CPsych (York University); Angela K. Troyer, PhD, CPsych (Baycrest Hospital)
- 2008 – 2012 **B.Eng., Chemical Engineering**, *Azad University*, Tehran, Iran, *Transferred*

Skills

- Programming R (Tidyverse, ggplot2, rstan), Python (Pandas, NumPy), MATLAB, SQL, Bash
- Data Science Machine Learning, Bayesian Modeling, Statistical Inference, Neuroimaging Analysis (FSL, SPM), Psychophysics (PsychToolbox)
- UX Research User Interviews, Usability Testing, Survey Design & Analysis, Psychometrics, Interaction Design.
Portfolio: mdastgheib.com/portfolio
- Technologies Git, GitHub, Google Cloud Platform, Quarto, \LaTeX , RMarkdown
- Languages English (Proficient), Persian (Native), French (Basic)

Research & Professional Experience

- 2023–Present **Graduate Student Researcher**, *Soundmind collaboratory*, Northeastern University
- Validated neuropsychological tests
 - Trained and supervised three research assistants
- 2022–Present **Graduate Student Researcher**, *LANI lab*, UC Riverside
- Analyzed Diffusion MRI data using FSL, including Probabilistic Tractography and Tensor-Based Metrics
 - Trained and supervised three research assistants

- 2021–Present **Graduate Student Researcher**, *Seitz lab*, UC Riverside
- Designed and optimized perceptual and memory experiments using PsychToolbox
 - Conducted extensive data analysis using R for behavioral and psychophysical data
 - Preprocessed and analyzed pupillometry data using MATLAB, R, and Python
 - Coordinated research projects and supervised two research assistants
 - Collected data from over 80 participants
- 2021 **Research Assistant I**, *Surgical Safety Technologies (SST)*, Toronto, ON
Artificial Intelligence Annotator
- Assisted in the development of a state-of-the-art instance segmentation module for surgical tool detection and tracking
 - Applied algorithms for quantifying inter-rater reliability metrics amongst the participating surgical analysts
 - Conducted an in-depth surgical review of relevant healthcare papers in the machine learning domain
- 2017 – 2019 **Graduate Research Assistant**, *Neuroplasticity lab*, Queen's University
- Conducted data collection and analysis for over 60 participants
 - Analyzed behavioral data using R and Bayesian methods
 - Assessed sleep stages through EEG/EMG/EOG recordings
 - Supervised volunteers and two research assistants
 - Managed polysomnography equipment and protocols
- 2015 – 2020 **Research Fellow**, *Toronto General Hospital*, Toronto, ON
- Conducted data collection and analysis in the Internal Medicine Department, digitizing paper documents and managing patient records.
 - Utilized Electronic Medical Records (EMR) system for data retrieval and analysis, ensuring data integrity and confidentiality.
 - Contributed to clinical research through data management, analysis, and literature reviews.
- 2017 **Research Volunteer**, *Baycrest Hospital*, North York, ON
- Assisted organizers in educational seminars for the Memory & Aging program, contributing to knowledge dissemination in geriatric care.
 - Analyzed older adults' behavioral performance post-workshop, aiding cognitive health assessments.
 - Supported research initiatives on cognitive health in older adults, aiding evidence-based interventions.
- 2016 **Keenan Research Summer Student**, *St. Michael's Hospital*, Toronto, ON
- Shadowed administration of neuropsychological tests to older adults with MCI, including MoCA and MMSE.
 - Participated in case discussions with Neurologists and Neuropsychologists.
- 2008 – 2009 **Undergraduate Research Volunteer**, *Tarbiat Modares University*, Tehran, Iran
- Conducted literature review in the department of chemical engineering.

Publications

Review paper

- 2022 **Dastgheib, M.**, Kulanayagam, A., & Dringenberg, H. C., Is the role of sleep in memory consolidation overrated?, *Neuroscience & Biobehavioral Reviews*, 140, 104799

<https://doi.org/10.1016/j.neubiorev.2022.104799>

In preparation

- TBD **Dastgheib, M.**, Sun, A., Yaghoubi, K., Chen, X., Peters, M., Zhang, W., Bennett, I., Seitz, A., *Concurrent Physical and Cognitive Effort: Effects on Memory and Perceptual Performance in Younger Adults.*
- TBD Sun, A., **Dastgheib, M.**, Zhang, W., Maniscalco, B., Peters, M., Seitz, A., *Modulation of Perception and Metacognition by Hand Grip-Based Arousal in Older Adults.*

Media Coverage

- 2024 **The Boston Globe**, Article: *Five facts about sleep everyone should know*
- Work cited in mainstream media coverage of sleep research
 - Published: September 23, 2024
 - [Read article](#)

- 2023 **The Harvard Gazette**, Article: *Researchers one step closer to understanding daydreams*
- Research findings featured in Harvard University's official news publication
 - Published: December 2023
 - [Read article](#)
- 2024 **Curiosity Daily Podcast (Discovery)**, Episode: *Daydream Brain, Power of a Laugh, Caffeine & Soccer*
- Featured and discussed findings from my review article: *Is the role of sleep in memory consolidation overrated? Neuroscience & Biobehavioral Reviews* (2022).
 - Original release: Jan 25, 2024; Re-release: Dec 19, 2024.
 - [Listen here](#)

Conference Abstracts

- 2020 Sarwar, S., Shafiee, M., **Dastgheib, M.**, Hajighadimi, S., Ghafarian, H., Rokni, H., *Current Diagnostic Approaches to Patients with Hypernatremia at University Health Network Hospitals*, Critical Care Canada Forum 2019 Abstracts. Can J Anesth/J Can Anesth 67 (Suppl 1), 1–162 (2020)., <https://doi.org/10.1007/s12630-019-01552-z>

Conference Talks and Presentations

International Conference Presentations

- 2025 Selective Modulation of Auditory Perception and Metacognition by Hand Grip-Based Arousal in Older Adults, *Metacognition, Aging and Perception Symposium (MAPS 2025)*, Rovereto, Italy, Sun, A., **Dastgheib, M.**, Maniscalco, B., Peters, M., Zhang, W., Seitz, A.
- 2025 Functional MRI Connectome Fingerprinting in Older Adults, *IEEE International Symposium on Biomedical Imaging (ISBI 2025)*, Houston, TX, Ghaffari, A., Langley, J., **Dastgheib, M.**, Chen, X., Bennett, I., Hu, X.
- 2024 The Differential Effect of Physical Effort within Perceptual and Visual Memory Domains: Insights from Psychometric Function Analysis, *65th Annual Meeting of the Psychonomic Society*, New York City, NY, **Dastgheib, M.**, Bennett, I., Seitz, A.
- 2023 The Effect of Physical Effort on Perception and Visual Memory, *International Conference on Learning and Memory*, Huntington Beach, CA, **Dastgheib, M.**, Yaghoubi, K., Kobaissi, H., Alba, J., Bennett, I., Seitz, A.
- 2019 The Effects of Self-guided Meditation and Napping on Non-Declarative and Declarative Memory Consolidation, *Canadian Society for Brain, Behaviour, & Cognitive Sciences meeting*, Waterloo, ON, **Dastgheib, M.**, Legro L., Stewart M., Dringenberg H.
- 2019 Discrepancy between Clinical Volume Assessment vs. Laboratory Investigations and Change in the Hyponatremia Management, *17th International Congress of Nephrology, Dialysis, and Transplantation*, Tabriz, Iran, Shafiee, M., Mumtaz, M., **Dastgheib, M.**, Rezaei, R.
- 2019 Common Etiologies of Hypernatremia and Current Analytic Approaches Used at University Health Network Hospitals, *17th International Congress of Nephrology, Dialysis, and Transplantation*, Tabriz, Iran, Shafiee, M., **Dastgheib, M.**, Sarwar, S., Hajighadimi, S., Rezaei, R.

Intramural Conference Presentations

- 2019 Current Diagnostic Approaches to Patients with Hypernatremia at University Health Network Hospitals, *Critical Care Canada Forum (CCCCF)*, Toronto, ON., Sarwar, S., Shafiee, M., **Dastgheib, M.**, Hajighadimi, S., Ghafarian, H., Rokni, H.
- 2018 The Effects of Self-guided Meditation and Napping on Non-Declarative and Declarative Memory Consolidation, *Southern Ontario Neuroscience Association (SONA) conference*, Guelph, ON., **Dastgheib, M.**, Legro L., Stewart M., Dringenberg H.
- 2017 Are Older Adults' Attitudes about Aging Influenced by a Psychoeducational Program?, *Psychology Undergraduate Thesis Poster Day at York University*, Toronto, ON., **Dastgheib, M.**

- 2016 Syndrome of Inappropriate Anti-Diuretic Hormone (SIADH); Risks and Dangers of a Misnomer, *2016 Critical Care Canada Forum (CCCF)*, Toronto, ON., Shafiee M., Tabataba-Vakili S., Parastandeh G., Hakimfaal S., Umar S., **Dastgheib M.**, Nazarian, A., Ghaffarian H.
- 2015 Enzymatic Activity of Pancreatic α -amylase in Microgravity, *2015 Science Rendezvous at Ryerson University*, Toronto, ON., Aziz, T., Calabria, D., **Dastgheib, M.**, Dastgheib, M., Farache, R., Geramy, S., Haberfellner, C., Lee, J., Tampus, J., Upshaw, T

Teaching & Mentorship

Teaching Experience

- 2023–Present **Graduate Teaching Assistant**, *Department of Psychology*, UC Riverside
Taught discussion sections, Marked assignments and exams.
Average overall effectiveness rating (AOE) out of 7
- Neuroscience Of Learning & Memory, 2 sections (Prof. Edward Korzus, Summer 2025) – AOE: n/a
 - Cognitive Processes (Prof. Halle Dimsdale-Zucker, Winter 2025 and Spring 2025) – AOE: 6.08
 - Psychological Methods: Statistics (Prof. Ilana Bennett, Fall 2024) – AOE: 6.63
 - Perception (Prof. Lawrence Rosenblum, Spring 2024) – AOE: 6.77
 - Introduction to Psychology (Prof. Annie Ditta, Winter 2024) – AOE: 6.01
 - Perception (Prof. Sarah Maples, Fall 2023) – AOE: n/a
- 2018 – 2019 **Graduate Teaching Assistant**, *Department of Psychology*, Queen's University
Taught classes and tutorials, Marked assignments and exams.
- History of Modern Psychology (Prof. Cella Olmstead, Winter 2019)
 - Brain & Behaviour I (Prof. Tyson Baker, Fall 2019)
 - Introduction to Comparative Cognition (Prof. Cella Olmstead, Fall 2019)
 - Introduction to Cognition (Prof. Monica Castelhana, Winter 2018 and Winter 2019)
 - Advanced Perception (Prof. Niko Troje, Winter 2018)
- 2011 – 2012 **Instructor**, *Mofid Middle School*, Tehran, Iran
Supervisor: Mostafa Moeini
- Persian Literature and Composition

Mentorship Experience

- 2022–Present **Undergraduate Mentorship**, *UC Riverside*
- Participant recruitment and training
 - Conducting behavioral experiments
 - Data cleaning, analysis, and quality control (QC) of pupillometry and neuroimaging data
 - Mentees: *Jacqueline Alba, Hadi Kobaissi, Shanya Sanof, Haley Martinez, Niku Nagpal*
- 2023–2024 **Undergraduate Mentorship**, *Northeastern University*
- Quality control of behavioral performance and pupillometry data
 - Data cleaning and analysis
 - Mentees: *Thomas Kato, Sadhana Gopinath, Rachel Keltz*
- 2017–2019 **Undergraduate Mentorship**, *Queen's University*
- Participant recruitment and training
 - Polysomnography analysis
 - Data cleaning, analysis, and quality control of EEG data
 - Mentees: *Liza Legro, Katie McGuire*

Honors & Awards

- 2023–2024 **Graduate Student Travel Award**, *Graduate Student Association*, UC Riverside
- 2021 **Dean's Distinguished Fellowship Award**, *Graduate Division*, UC Riverside
- 2018–2019 **Graduate Student Conference Travel Award**, *Department of Psychology*, Queen's University
- 2018 **Mitchell and Wilda Andriesky Award**, *Faculty of Graduate Studies*, Queen's University
- 2017 **Entrance Scholarship**, *Faculty of Graduate Studies*, Queen's University
- 2016 **Dean's Honour Roll**, *Faculty of Science*, York University

Professional Development

User Experience and Interaction Design

2024–Present **Interaction Design Specialization**, *LinkedIn Learning*

- Foundational training in user-centered design principles, including user research methodologies, prototyping, usability testing, and heuristic evaluation.

[View Specialization](#)

Data Science & Analytics

2018–2022 **Data Science & Analytics Training**, *UC Riverside & DataCamp*

- **Principles of Data Science (UC Riverside):** Formal graduate training in creating robust, reproducible, and automated data workflows using R, RMarkdown, and Git/GitHub. Coursework focused on data wrangling, literate programming, and transparent open-science practices.
- **Bayesian Modeling & Statistical Inference:** Extensive specialized training in Bayesian regression (*rstanarm*), Generalized Linear Models (GLMs), and factor analysis.
- **Advanced R for Reproducible Research:** Developed expertise in building R packages for sharable code, advanced object-oriented programming, and writing high-performance R code for efficiency.
- **Full Data Pipeline Proficiency:** Mastered end-to-end data processing, including data manipulation (Tidyverse, SQL), data visualization (*ggplot2*), and machine learning (unsupervised and supervised learning in R).

Research Methodology and Tools

2021 **Research Transparency & Reproducibility Training (RT2)**, *Berkeley Initiative for Transparency in the Social Sciences (BITSS)*

- Intensive, hands-on training in cutting-edge methods for transparent and reproducible research.
- **Key Competencies:** Pre-registration and pre-analysis plans to reduce bias; data de-identification for ethical data sharing; version control with Git/GitHub; creating dynamic documents in R for computational reproducibility.
- [View Certificate](#)

2021 **FSL Neuroimaging Analysis Training**, *Oxford Centre for Functional MRI of the Brain (FMRIB)*

- Hands-on training in fMRI data analysis, including preprocessing, GLM-based statistical analysis, and functional connectivity.

[View Certificate](#)

Clinical Assessment Tools

2021 **Montreal Cognitive Assessment (MoCA) Certification**, [MoCA Cognitive](#)

- Certified to administer and interpret the MoCA test for cognitive impairment screening

Community Involvement

Riverside, CA

2024 **Speaker, Aging and Your Brain Symposium**, *Center for Health Disparities Research*, UC Riverside

- Delivered a presentation on complex data analysis techniques to a lay audience of 50+ community members to improve science literacy and engagement
- Conducted a Q&A session for older adults

2022 – 2023 **Lab Representative**, *Psi Chi Undergraduate Lab Fair*, UC Riverside

2022 **Panelist in the cognitive neuroscience area**, *UCR R'PSYC Conference*, UC Riverside

2022, 2024 **Reviewer**, *UCR R'PSYC Conference*, UC Riverside

- Reviewing and assessment of abstract submissions

Kingston, ON

2018 – 2019 **Category Judge**, *The Frontenac, Lennox and Addington Science Fair*

- Evaluated projects at the science fair

- 2018 – 2019 **Content Developer**, *RISE — Research and Information Science Education*, Queen's University
- Improved research skills and scientific literacy in students
 - Educational outreach at the secondary school level
- 2018 – 2019 **Volunteer**, *Providence Care Hospital*
- 2017 – 2019 **Educational Mentorship**, *QchaT Psychology*, Queen's University
[Tehran, Iran](#)
- 2008 – 2012 **Columnist**, *Music review in Aan magazine*, University of Tehran Student Journal

Affiliations & Memberships

- Current Psychonomic Society, Cognitive Science Society, The National Center for Faculty Development and Diversity
- Past Southern Ontario Neuroscience Association (SONA), Canadian Society for Brain, Behaviour, & Cognitive Science (CSBBCS), Society for Philosophy and Psychology