Ata B. Karagoz, B.S.

Department of Psychological and Brain Sciences, Washington University in St. Louis
832-738-8196 | a.b.karagoz@wustl.edu

EDUCATION

Washington University in St. Louis, St. Louis, MO — Sep. 2020 – Present
PhD in Psychological and Brain Sciences

Washington University in St. Louis, St. Louis, MO — Sep. 2020 - Dec. 2022
MA in Psychological and Brain Sciences

The University of Texas at Austin, Austin, TX — Aug. 2014 – May 2018
Bachelor of Science in Neuroscience

RESEARCH INTERESTS

My research interests include studying the formation of conceptual cognitive maps and hierarchical structures in the brain to accurately represent the relationships between items. I am also interested in event memory, reinforcement learning, naturalistic stimuli, and neuroimaging.

PUBLICATIONS

Karagoz, A.B., Reagh, Z.M., Kool, W. (Under review) Construction and use of cognitive maps in model-based control. (preprint link: https://psyarxiv.com/ngqwa/).

Morse, S., **Karagoz, A.B.,** Reagh, Z.M. Event boundaries directionally influence item-level recognition memory. (preprint link: https://psyarxiv.com/h8bj2/).

Sherrill, K.R., Molitor, R.J., **Karagoz, A.B.,** Atyam, M., Mack, M.L., Preston, A.R. (In press, Cerebral Cortex) Generalization of cognitive maps across space and time.

MANUSCRIPTS IN PREPARATION/SUBMITTED

Roome, H.E., Sherrill, K.R., Coughlin, C.A., **Karagoz, A.B.,** Preston, A.R. (In Preparation) The development of spatial navigation: Importance of cue integration.

Karagoz, A.B., Reagh, Z.M. (In Preparation) Representations of perceptual versus semantic relationships among characters in naturalistic events.

CONFERENCE/POSTER PRESENTATIONS

Karagoz, A.B.*, Kool, W., Reagh, Z.M. (2023) The influence of rule-based event boundaries on item memory. Poster presented at International Conference of Learning and Memory (LearnMem).

Morse, S.J.*, **Karagoz, A.B.,** Reagh, Z.M. (2023) Event boundaries at encoding influence mnemonic discrimination. Poster presented at International Conference of Learning and Memory (LearnMem).

Roome, H.E.*, Sherrill, K.R., Nguyen, K.V., **Karagoz, A.B.,** Coughlin, C.A., Preston, A.R. (2022) Medial temporal lobe error signals mediate developmental differences in spatial memory precision. Nano-symposium talk at Society for Neuroscience (SfN).

Sherrill, K.R.*, Roome, H.E., **Karagoz, A.B.,** Long, J.M., Preston, A.R. (2022) Emergence of hippocampal and ventromedial prefrontal cortex context-dependent coding during virtual navigation. Nano-symposium talk at Society for Neuroscience (SfN)

Karagoz, A.B.*, Reagh, Z.M., Kool, W. (2022) Constructing and using cognitive maps for model-based control. Poster presented at Reinforcement Learning and Decision Making (RLDM).

Karagoz, A.B.*, Reagh, Z.M. (2022) Representations of perceptual versus semantic relationships among characters in naturalistic events. Poster presented at the Context and Episodic Memory Symposium (CEMS).

Reagh, Z.M.*, Morse, S.J., Fishman, R., Angulo-Lopera, S., **Karagoz, A.B.** & Delarazan, A.I., (2022). Event boundaries at encoding influence mnemonic discrimination. Poster presented at Cognitive Neuroscience Society (CNS).

Delarazan, A.D.*, **Karagoz, A.B.*,** Montchal, M.E., Yassa, M.A., Ranganath, C., Reagh, Z.M. (2021) Hippocampal and entorhinal contributions to naturalistic event context reinstatement. Virtual Poster presented at the Society for Neuroscience Conference (SfN).

Karagoz, A.B.*, Reagh, Z.M., Kool, W. (2021) The construction and use of cognitive maps in model-based control. Virtual Poster presented at the Psychonomic Society Annual Meeting.

Karagoz, A.B.*, Reagh, Z.M. (2021) Decoding perceptual and semantic relatedness among characters in naturalistic events. Virtual Poster presented at the Cognitive Neuroscience Society Conference.

Sherrill, K.*, Molitor, R., **Karagoz, A.,** Atyam, M., Mack, M., Preston, A. (2019) Hippocampal and medial prefrontal cognitive maps formed through spatial navigation influence processing in non-spatial contexts. Talk presented at the Context and Episodic Memory Symposium.

Pederson, A.M.*, **Karagoz, A.B.*,** Dean, D., Dembny, K.E., Dodla, M., Duncan, L., Fahmy, R., Kuo, A., Haimes, D.B., Golding, N.L. (2017). Role of Kv1 channels in regulating the excitability and firing patterns of neurons in the medial geniculate body. Poster presented at the Society for Neuroscience Conference.
* *denotes presenter*

AD-HOC REVIEWING

- Cerebral Cortex
- Neuron
- Nature Communications
- eLife

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CERTIFICATIONS AND CREDENTIALS

The University of Texas Biomedical Imaging Center, Level 1 and 2 Siemens fMRI Operator.

PROFESSIONAL EXPERIENCE

The Preston Lab, The University of Texas at Austin — Jan. 2018 – Aug. 2020
Supervisor: Alison Preston, Ph.D.
Lab Manager

- Assisted in data collection and analysis for various memory integration and navigational projects.
- Scheduled and built a participant pool for behavioral and scanning projects.
- Managed IRB approval for lab studies for amendments and continuing reviews.
- Assisted in developing a streamlined process for data archival.
- Managed cash advances and lab administration.

RESEARCH EXPERIENCE

Complex Memory Lab, Washington University in St. Louis — Aug. 2020 – Present
Supervisor: Zachariah Reagh, Ph.D.
Graduate Research Assistant

- Designing research and data collection.
- Analyzing open fMRI datasets.
- Developing computational models of behavior.

The Preston Lab, The University of Texas at Austin — Nov. 2015 – Jan. 2018
Supervisor: Alison Preston, Ph.D.
Undergraduate Research Assistant

- Assisted in fMRI scanning studies.
- Wrote analysis scripts in MATLAB for ongoing projects.
- Designed a study and developed presentation code in MATLAB.

TEACHING EXPERIENCE

GraduateTeaching Assistant, *Washington University in St. Louis* — Jan. 2023 – May 2023
Course: Computational Cognitive Science

- Helped craft assignments in Python
- Hosted review sessions and taught programming

Assistant to Instructor, *Washington University in St. Louis* — Sep. 2021 – Dec. 2021
Course: Human Learning and Memory

- Wrote and graded quizzes.
- Hosted exam review sessions.

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Mentoring Undergraduate Research Assistants June 2018 – Present

Complex Memory Lab

- Holly Graziano **(Washington University in St. Louis)**
- Ron Fishman **(Washington University in St. Louis)**
- Jacob Tartakovsky **(Washington University in St. Louis)**
- Sofia Angulo-Lopera **(Washington University in St. Louis)**

Preston lab

- Connor McKee **(UT Austin)**
- Doru Gucer **(UT Austin)**
- Katherine Vasquez **(UT Austin)**

Psychology Outreach with Elementary Schoolers Sep. 2020 – Dec. 2020

- Zoom lectures involving introductory psychology topics.
- Taught students about perception using zoom relevant lessons.

GitHub Clinic, *Complex Memory Lab* Sep. 2020

- Taught version control tools.
- Taught best practices involving git.

GitHub Clinic, *Preston Lab* May 2019

- Taught version control tools.
- Taught best practices involving git.

Peer Learning Assistant, The University of Texas at Austin Aug. 2015 – Dec. 2015

Course: Neural Systems 1

- Led weekly discussion sessions for peers in class.
- Attended weekly meetings with professor to target specific topics.

SKILLS

- Programming Languages: Python (fluent), MATLAB (fluent), R (beginner), bash scripting (intermediate), JavaScript (beginner)
- Reproducible Science Workflows: Docker/Singularity (beginner), Jupyter Notebooks (intermediate), GitHub (intermediate)
- Management of Open Science Protocols and Data
- Deep Learning Framework: pytorch (beginner)
- High Performance Computing Clusters: Texas Advanced Computing Center, Washington University Center for High Performance Computing
- fMRI data preprocessing: ANTS, FEAT, FSL
- Microsoft Office Suite
- Languages: English (native), Turkish (native), German (beginner)

PROFESSIONAL MEMBERSHIPS AND AFFILIATIONS

- Society for Neuroscience, student member
- Cognitive Neuroscience Society, student member
- Psychonomic Society, student member