

REBECCA CUTLER, PH.D

Cognitive Neuroscientist · The University of Texas at Austin

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Cognitive neuroscientist passionate about storytelling with data. I use data-science, statistical modeling and machine learning to understand human cognition.

PRACTICAL SKILLS

- Programming: R (tidyverse, dplyr, stringr, etc.), Python (pandas, numpy, scikit learn), Matlab, Shell/Bash, HTML, CSS
- Experimental Design & Analysis
- Data visualization (ggplot, matplotlib)
- Time-series Analysis
- Scientific Communication
- Statistical Analysis: Bayesian and Frequentist
- Predictive Analytics / Machine Learning
- Regression & Hierarchical Modeling
- Pattern Recognition & Classification
- NLP (Word Embedding)
- A/B Testing
- Consultation, Teaching & Mentorship

EXPERIENCE

2022 –

COGNITIVE NEUROSCIENTIST (POSTDOCTORAL RESEARCHER)

MEMORY AND AGING LAB | THE UNIVERSITY OF TEXAS AT AUSTIN | TX

Design and implement experimental protocols and analyze complex datasets to extract meaningful patterns and trends. Translate scientific questions into actionable insights through statistical modeling and machine learning algorithms. Effectively convey complex, data-driven findings to both technical and non-technical audiences.

EDUCATION

2016 – 2022

PH.D. COGNITION & COGNITIVE NEUROSCIENCE | VANDERBILT UNIVERSITY | TN

COMPUTATIONAL MEMORY LAB

DISSERTATION TITLE | Characterizing memory space: The neural representational structure of episodic and semantic memory

2011 - 2015

BS COGNITIVE & PSYCHOLOGICAL SCIENCES | UNIVERSITY OF GLASGOW | SCOTLAND

Distinction and Honors of the First Class (4.0)

2013 - 2014

COGNITIVE SCIENCE | UNIVERSITY OF CALIFORNIA, BERKELEY | CA

RESEARCH EXPERIENCE

2016 – 2022

GRADUATE RESEARCHER | **COMPUTATIONAL MEMORY LAB**
VANDERBILT UNIVERSITY, TN | US

Specialized in computational modeling of cognition, leading the design and execution of 3 large experiments, with neuroimaging data from over 100 human participants. Effectively communicated research findings at 13 international conferences, and published 3 peer-reviewed scientific articles. Taught undergraduate classes, and mentored a team of research assistants.

2015

RESEARCH ASSISTANT | **DIVISION OF MIND AND BRAIN RESEARCH**
CHARITÉ UNIVERSITÄTSMEDIZIN | BERLIN | GERMANY

Designed and maintained a scientific toolbox for neurogenetics research · Practical clinical experience in psychopathology ward · Database management of large genetics project with over 1,000,000,000 data entries ·

2014 - 2015

RESEARCH ASSISTANT | **NEUROCOGNITION OF DECISION-MAKING LAB**
UNIVERSITY OF GLASGOW | SCOTLAND | UK

Designed and collected data for a reinforcement learning experiment · Utilized Drift Diffusion Modeling to make predictions about value-based decision making ·

2013 - 2014

RESEARCH ASSISTANT | **COGNITION & ACTION LAB**
UNIVERSITY OF CALIFORNIA | BERKELEY, CA | US

Computational model of categorization · Brain stimulation: TMS and tDCS · Category learning and classification ·

PUBLICATIONS

Wild, M. G., **Cutler, R. A.**, Bachorowski, J. (2023) Quantifying social performance: A review and implications for future work. *Frontiers in Psychology*, 14, 1124385

Maxcey, A. M., **Cutler, R. A.**, Nosofsky, R. M., Shiffrin, R. M. [Revised & resubmitted] Does inhibition cause forgetting in recognition tests? *Journal of Experimental Psychology: Learning, Memory, and Cognition*

Joykuty, Z., **Cutler, R. A.**, Dai, X., Maxcey, A. M. [in revision] No mirror effect in recognition-induced forgetting. *Journal of Experimental Psychology: Human Perception and Performance*

Cutler, R. A., Duff, M. C., Polyn, S. M. (2019). Searching for semantic knowledge: A vector space semantic analysis of the feature generation task. *Frontiers in Human Neuroscience*, 13, 341

Polyn, S. M., & **Cutler, R. A.** (2017). Retrieved-context models of memory search and the neural representation of time. *Current Opinion in Behavioral Sciences*, 17, 203-210.

SELECT CONFERENCES & TALKS

Cutler, R. A., Mirjalili, S., Duarte, A. (2023) Semantic memory space becomes denser with age: An ERP analysis of semantic similarity in feature verification. *Psychonomics Society*. San Francisco, CA [**Chair of Cognitive Aging Symposium**]

Cutler, R. A., Morton, N. W., Duff, M. C., Polyn, S. M., Duarte, A. (2022) Characterizing memory space: The neural representational structure of episodic and semantic memory. *Cognition, Brain, and Behavior seminar*. Austin, TX

Cutler, R. A., Morton, N. W., Polyn, S. M. (2021) Stress-testing the memory system: Distraction disrupts temporal and semantic organization in memory search. *Vanderbilt CCN Colloquium*. Nashville, TN

Maxcey, A. M., **Cutler, R. A.,** Nosofsky, R. M., Shiffrin, R. M. (2021) Does inhibition cause forgetting in recognition tests? *Recognition memory symposium. Psychonomics Society*. (Virtual: COVID-19)

Cutler, R. A., Jeon, J., Polyn, S. M. (2020) Characterizing the interaction of temporal and semantic information in categorized free recall. *Federation of European Neuroscience Societies*. Virtual (COVID-19)

Cutler, R. A., Polyn, S. M. (2019) Searching for semantic knowledge: A vector space semantic analysis of the feature generation task. *Context and Episodic Memory Symposium*. Philadelphia, PA.

Cutler, R. A., Polyn, S. M. (2018) A semantic vector space analysis of feature generation in hippocampal amnesia. *Cognitive Neuroscience Society*. Boston, MA.

TEACHING EXPERIENCE

Spring 2021	Teaching Assistant, Deciding to be an Expert Witness Dr. Maxcey
Spring 2018	Teaching Assistant, Abnormal Psychology Dr. Olatunji
Fall 2017	Teaching Assistant, Human Memory Dr. Polyn

Guest Lecturer & Instructor at Summer Academies:

Fall 2023	UT Austin Bootcamp for incoming PhDs: Data Visualization & Statistics
Summer 2021	Intro to Computational Modeling
Summer 2020/21	Data Visualization
Summer 2019	Statistics for Neuroscience
Summer 2018	Human Memory and Clinical Psychology
Summer 2017	Memory
Fall 2016	Multivariate Pattern Analysis (Human Memory)
Fall 2016	Physics & Physiology of fMRI (Computational Neuroscience)

SERVICE AND OUTREACH

2023 –	catchafire.org : Volunteer Data Scientist & Data Consultant
2019 – 2022	Vanderbilt Graduate Worker's Union liaison
2019 – 2022	SustainVU - Graduate student rep. for environmental committee
2018 – 2022	Psychology Graduate Student Council representative
2018 – 2022	VU Imaging Center tours for high school & Summer Access groups
2018 – 2021	Lead organizer for VU Grad Recruitment Weekend