Maggie von Ebers

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EDUCATION

The University of Texas at Austin *Expected May 2024*
Austin, TX
Master of Science, Computer Science; Minor in Neuroscience

Texas A&M University *May 2020*
College Station, TX
Bachelor of Science in Computer Science; Minor in Mathematics

RELEVANT EXPERIENCE

Sandia National Laboratories *August 2023 - Present*
Albuquerque, NM
Part-time Student Researcher
- Developing machine learning algorithms to find a user's position on a map in low-data settings

Dell Technologies *August 2020 - June 2022*
Austin, TX
Software Engineer
- Served millions of customers a day around the world by creating robust and rapid pipelines to update Dell.com, using Kafka messaging queues
- Independently added a way to schedule updates to the website with Quartz.NET and Cassandra

Sandia National Laboratories *May 2019 - August 2019*
Albuquerque, NM
Research & Development Intern
- Created an energy-efficient, secure, and fast high-performance computing cluster using portable computers for research on remote worksites
- Built and monitored systems that serve email and other administrative programs at Sandia, using Elasticsearch clusters and Kibana's machine learning and visualization tools

Neuroscience Lab - Texas A&M *February 2018 - September 2018*
Bryan, TX
Assistant Researcher
- Engineered image processing techniques in MATLAB and Python to map out brain structures in rats for Dr. Sun Wong's research

PUBLICATIONS

von Ebers M, Haque Nirjhar E, H. Behzadan A, Chaspari T 2020, **'Predicting the Effectiveness of Systematic Desensitization Through Virtual Reality for Mitigating Public Speaking Anxiety'** ICMI 2020: ACM International Conference on Multimodal Interaction, Utrecht, the Netherlands, October 25-29 (https://youtu.be/4p4tXSkBAK8)

GRADUATE CLASS PROJECTS

Neural Networks: Continual Learning through Imagination
https://github.com/mx60s/CS394N
- Adapted Saxena et al.'s 2022 approach for making an old model learn new classes of images (i.e. "bird"), which "recalls" previously seen examples ("bat") that are similar to the new class
- Replaced old training examples with "memories" generated by a DALL-E model fine-tuned on the task

Machine Learning: Latent Variable Identification
https://github.com/mx60s/ML-Final-Project
- Spearheaded a team to create an improved method of decoding a rat's actual position from its neural recordings
- Enhanced a Deep Variational Autoencoder (based on Kim et al., 2022) with additional convolutional layers for processing larger spans of time

Master's Thesis: Comparing Rat and Primate Spatial Representations
- Implemented a computational model by Gornet and Thomson 2023 which shows how rats can understand space from visual input
- Expanding the model to include a changing head direction and comparing agents that move like rats and non-human primates to develop theories of why hippocampal representations are different