RYLAN SCHAEFFER

Skills

Languages
Python
R
Go
MATLAB
C/C++

Libraries
PyTorch
NumPy
Pandas
SciPy
HuggingFace
TensorFlow
Jax

DB & Querying
Postgres
Presto
Hive
MySQL
SQLite

OS
Linux
macOS
Windows

Cognitive Neuroscience
DataJoint
SPM
Amazon MTurk
Gorilla

Contact

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Education

Stanford University	**Sep 2021 - Present**

PhD, Computer Science
CS 25 Transformers Course Co-Instructor

Harvard University	**Sep 2019 - Dec 2020**

MS, Computational Science & Engineering (4.0 GPA)

University College London	**Sep 2017 - Sep 2018**

MRes, Cognitive Neuroscience (Distinction = British 4.0 GPA)

University of California, Davis	**Sep 2011 - Jun 2016**

BS, Computer Science Engineering & BS, Computational Statistics
Outstanding Senior Award, Department of Computer Science and Engineering

Publications

Schaeffer, et al. Are Emergent Abilities of Large Language Models a Mirage? **In Prep.**

Schaeffer, et al. Double Descent Demystified: Identifying, Interpreting & Ablating the Sources of a Deep Learning Puzzle. **In Prep.**

Schaeffer*, Khona*, et al. Self-Supervised Learning of Efficient Algebraic Codes Generates Grid Cells. **In Prep.**

Bricken, *Schaeffer*, et al. Emergence of Sparse Representations from Noise. **Under Review @ ICML 2023.**

Schaeffer, et al. No Free Lunch from Deep Learning in Neuroscience: A Case Study through Models of the Entorhinal-Hippocampal Circuit. **NeurIPS 2022.**

Schaeffer, et al. Streaming Inference for Infinite Feature Models. **ICML 2022**.

Schaeffer, et al. Streaming Inference for Infinite Non-Stationary Clustering. **Conference on Lifelong Learning Agents (CoLLAs) 2022**.

Schaeffer. An Algorithmic Theory of Metacognition in Minds and Machines. **NeurIPS 2021 Workshop: Metacognition in the Age of AI.**

Schaeffer, et al. Efficient Online Inference for Nonparametric Mixture Models. **UAI 2021.**

Schaeffer et al. Neural network model of amygdalar memory engram formation and function. **COSYNE 2021.**

Schaeffer et al. Reverse-engineering Recurrent Neural Network solutions to a hierarchical inference task for mice. **NeurIPS 2020.**

Professional Experience

Stanford University	**Sep 2021 - Present**

Graduate Student Researcher
Researching emergence, reasoning and scaling laws in large language models; model distillation; AI safety.

Massachusetts Institute of Technology	**Jan 2020 - Present**

Senior Research Associate & Graduate Student Researcher
Conducted machine learning and computational neuroscience research on deep learning, variational inference, Bayesian nonparametrics and reinforcement learning, etc.

Google DeepMind	**May 2021 - Jul 2021**

Research Engineer Intern
Trained hierarchical reinforcement learning agents on AndroidEnv using Acme, XManager, etc.

Uber	**Oct 2018 - Sep 2019**

Data Scientist, Intelligent Decision Systems Team
Placed 3rd out of 217 teams in Uber's multi-week Machine Learning Hackathon. Increased accuracy of Uber's anomaly detection platform from 67% to 81%.