RYLAN SCHAEFFER

Skills

Languages
Python
R
Go
MATLAB
C/C++

Libraries
PyTorch
NumPy
Pandas
SciPy
TensorFlow
Jax
Neural Tangents

DB & Querying
Presto
Hive
MySQL
Postgres
SQLite

OS
Linux
macOS
Windows

Neuroscience
DataJoint
SPM
Amazon MTurk
Gorilla

Contact

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Education

Harvard University   **Sep 2019 - May 2021 (Expected)**
Master of Engineering, Computational Science and Engineering
4.0 GPA
Teaching Assistant: AM207 Bayesian Methods (Graduate), CS109a Data Science

University College London   **Sep 2017 - Sep 2018**
Master of Research, Cognitive Neuroscience
Distinction (British Equivalent of 4.0 GPA)
Founded and managed UCL Artificial Intelligence Journal Club arranging 25 speakers from DeepMind, OpenAI, Uber AI Labs, Toronto, MILA, Stanford, Berkeley, Princeton and more.

University of California, Davis   **Sep 2011 - Jun 2016**
Bachelor of Science, Computer Science Engineering
Bachelor of Science, Computational Statistics
Outstanding Senior Award, Department of Computer Science and Engineering
University of California Regents Scholar
Designed and taught 3 courses: Cryptocurrency Technologies, History of CS, Davis Hacks

Publications

Rylan Schaeffer, Mikail Khona, Leenoy Meshulam, International Brain Laboratory, Ila Rani Fiete. Reverse-engineering Recurrent Neural Network solutions to a hierarchical inference task for mice. Neural Information Processing Systems (NeurIPS) 2020.

Experience

Massachusetts Institute of Technology   **Dec 2019 - Present**
Graduate Student Researcher, Fiete Lab
- Characterized how recurrent neural networks perform hierarchical inference using PyTorch. Invented novel distillation technique called Representation And Dynamics Distillation (RADD).

Harvard University   **Oct 2019 - Present**
Graduate Student Researcher, Sompolinsky Lab
- Modeled memory engram formation and behavior during associative learning and demonstrated consistency with experimental phenomena, using rate-based neural networks and Bayesian nonparametrics (i.e. the distance-dependent Chinese Restaurant Process).

Uber   **Oct 2018 - Sep 2019**
Data Scientist, Time Series Forecasting and Anomaly Detection Platform
- Placed 3rd out of 217 teams in Uber's Machine Learning Hackathon.
- Increased accuracy of Uber's anomaly detection platform in Go from 67% to 81% (precision 0.957 to 0.917; recall 0.247 to 0.618) by adding outlier removal preprocessing.
- Guided long-range budget planning and future efficiency efforts for Uber's data, storage and compute platforms using statistical forecasting models (Theta, ETS, ARIMA).
- Enabled model routing for anomaly detection by refactoring Metric Reliability Service.

UCL Wellcome Trust Centre for Human Neuroimaging   **Sep 2017 - Sep 2018**
Graduate Student Researcher, Fleming Lab
- Researched how stability of beliefs influences subjectively-reported confidence via novel human behavioral experiment. Collected data via Gorilla and Amazon MTurk. Analyzed results using two-way mixed-effects repeated measures ANOVA and mixed-effects regression in R.
- Developed novel model to explain metacognitive experimental findings, including the dissociability of action from evaluation, the ubiquity of hyper-metacognitive sensitivity and the response-locked error-related negativity. Implemented modified Advantage-Actor Critic architecture in TensorFlow.

Thermo Fisher Scientific   **May 2017 - Sep 2017**
Deep Learning Research Intern
Created provisionally-patented DNA sequencing algorithm using a sequence-to-sequence recurrent neural network-based model with 99.24% test accuracy, surpassing previous gold standard. Identified missing TensorFlow functionality and implemented own solution.