Eshed Margalit, PhD

www.eshedmargalit.com | eshed.margalit@gmail.com | GitHub: eshedmargalit

I am an AI scientist focused on understanding and interfacing with biological systems. I develop novel neural network architectures and apply them to complex spatial data in vision and biology. In my PhD, I developed neural networks that predict the structure, function, and development of the brain's visual system. I've also worked as the Principal AI Scientist at a stealth research startup building flexible and queryable self-supervised learning systems.

Experience

Principal Machine Learning Scientist, Noetik

2023 - Present

- Developing novel Transformer-based models to learn from large-scale multimodal biological data and applying those models to propose precision immunotherapies
- Designed and wrote a flexible, scalable ML framework for distributed model training with PyTorch, Ray, and a custom train loop
- Leading AI interpretability work, including integration with LLMs and custom web UIs for data exploration and model inference

Principal AI Scientist, Stealth AI Startup

2023

- Founding engineer; developed experimental self-supervised ML systems alongside full-stack web applications for interfacing with trained models.

Researcher, Stanford University

2016 - 2023

- Invented topographic deep artificial neural networks (TDANNs), the first models to predict the functional organization of visual cortex by discovering brain-like constraints
- Published 16 papers and preprints in computational neuroscience and machine learning, cited by 700+. Presented at leading conferences while working with profs. Dan Yamins, Kalanit Grill-Spector, and Irving Biederman

Lead Research Scientist, ANC Group LLC

2019 - 2023

- Sole developer of a scalable, cost-effective solution for tracking passengers in airports using a custom ML processing pipeline. Includes face detection, OCR, design and detection of custom 3D-printed barcodes in CT scans, real-time dashboards, and ML-based timeseries clustering
- Ran dev-ops, orchestrated cloud resources, recruited and supervised ML/stats interns, generated reports for Department of Homeland Security, secured funding

Education

PhD in Neurosciences
Stanford University
Dissertation: A Unified Model of the Structure and Function of Primate Visual Cortex

BS in Computational Neuroscience
University of Southern California
Minor: Computer Science

Skills, Awards, and Hobbies

- PyTorch, Lightning, Ray, AWS, Sagemaker, W&B, TensorFlow, OpenCV, Scikit-Learn, R, Typescript/React
- Co-author of NVIDIA Best Paper in NeuroAI Award, SVRHM @ NeurIPS 2022
- Grew personal habit-tracker into open-source website where 300+ users share their notes on academic papers. Personally reviewed 200+ papers in neuroscience and ML (1/wk for 4 years)
- Highest GPA in USC c/o 2016, 2x USC Best Neuroscience Student, NSF GRFP Winner
- Triathlete, guitarist, trail runner, rock climber, unix + vim enthusiast