(650) 880 - 7763 Mountain View, CA atlaskazemian@gmail.com

Atlas Kazemian

COGNITIVE SCIENCE RESEARCHER

Research Experience

2022 - Now

Department of Cognitive Science, Johns Hopkins University
Baltimore, MD
MA Researcher, advised by Michael Bonner.
Studying the nature of neural representations in the visual cortex by developing high performing, learning free neural network encoding models.

2021 - 2022

Department of Ophthalmology and Visual Sciences, University of British Columbia, Vancouver, BC
Research Assistant, advised by Jason Barton and Ipek Oruc.
Studying the behavioral markers of Prosopagnosia by training deep neural networks to distinguish the face scanning behavior of patients and healthy individuals.

Education

2022-2023

Johns Hopkins University
MA Cognitive Science

Thesis: "Toward a computational Neuroscience of Visual Cortex Without Deep Learning"

2021

Lighthouse Labs
Diploma Data Science

2015-2020

University of British Columbia
BAS Integrated Engineering

Conference Presentations and Posters

2023

Keynote Tutorial Presentation
"A high dimensional view of computational neuroscience", Kazemian A.,Elmoznino E., Bonner M.
Conference on Cognitive Computational Neuroscience

2023 **Poster**
"High-dimensional sampling in random neural networks competes with deep learning models of visual cortex", Kazemian A.,Elmoznino E., Bonner M.
Conference on Cognitive Computational Neuroscience

2023 **Talk Presentation**
"Toward a computational neuroscience of visual cortex without deep learning", Kazemian A.,Elmoznino E., Bonner M.
Vision Sciences Society Conference

2022 **Poster**
"Towards high-performance encoding models of visual cortex using modules of canonical computations", Kazemian A.,Elmoznino E., Bonner M.
Conference on Cognitive Computational Neuroscience

2022 **Poster**
"Scanning faces: A deep learning approach to studying the eye movements of prosopagnosic subjects", Kazemian A.,Oruc I., Barton J.
North American Neuro-Ophthalmology Society Annual Meeting

Work Experience

2021 **AdHawk Microsystems.** Toronto, ON
Data Science Intern

- Utilized AdHawk's eye-tracking glasses to model human reading behaviors, leading the experimental design, data collection and processing.
- Trained supervised models to predict cognitive load during reading.
- Enhanced product software with the newly integrated feature, resulting in heightened customer engagement.

2021 **Neobi,** Calgary, AB
Data Science Intern

- Extracted online product information from various e-commerce sites to gain insights into the Canadian cannabis market.
- Enhanced web scraping and data processing pipelines, reducing data anomalies.
- Conducted topic modeling and sentiment analysis on online customer reviews, which revealed key market trends for clients

2019 **Entuitive,** Calgary, AB
R&D Intern

- Automated the pricing workflow for parking renovations by developing models to forecast parking renovation expenses based on previous data. Resulting in price estimation accuracy.

Projects

2022-Now	**Modeling visual cortex with high dimensional, learning free convolutional neural networks** A family of Convolutional Neural Networks (CNNs) that explain image-evoked neural responses in the primate brain without pre-training on a computer vision task.
2021-2022	**A deep learning approach for studying face scanning in prosopagnosia** An ensemble of CNNs to distinguish subjects with prosopagnosia from healthy controls using their gaze pattern during a face recognition task.
2022	**A proposed neuro-imaging experiment for studying compositionality in visual perception** An fMRI experiment proposal for exploring the compositionality of neural representations during visual perception of object relations.
2021	**Predicting grasp and lift motions using EEG** A PyTorch project for predicting intended motor movement using EEG data collected from subjects while performing a series of grasp and lift motions.
2021	**Mental state decoder** A TensorFlow project for predicting mental state (relaxed, focused, neutral) using data collected from a consumer grade EEG headband.

Technical Skills

Programming	Python, SQL, C++
Computational Neuroscience	fMRI data analysis, dimensionality reduction techniques, cross-validated regression methods for comparing brain and model representations, eye-tracking data analysis
Deep Learning	PyTorch, TensorFlow
Machine Learning	Scikit-learn, Scipy
Data Manipulation and Analysis	Torch, Xarray, NumPy, Pandas
Visualization	Matplotlib, Seaborn, Plotly
Software Tools	Git, Jupyter Notebook

Languages

Farsi	Native language
English	Advanced Listener, Advanced Speaker, Advanced Reading and Writing