Navneedh Maudgalya

navneedhm@berkeley.edu
github.com/navneedh
925-548-9736

Education

University of California, Berkeley — Berkeley, CA
B.S., M.S. Electrical Engineering and Computer Science; B.A. Cognitive Science — Aug. 2016 – May. 2021
- Regents' and Chancellor's Scholar
- **Relevant Undergraduate Coursework:** Intro to Machine Learning, Probability & Random Processes, Optimization Models, Artificial Intelligence, Signals and Systems, Database Systems
- **Graduate Coursework:** Machine Learning on Multimedia Data, Trustworthy Machine Learning, Neural Computation, Statistical Learning Theory, Computational Color

Work

Alectio — Santa Clara, CA
Machine Learning Scientist — June 2020 - Aug 2020
- Developed methods to filter and label training data to improve model training cost, speed and accuracy using active learning, semi-supervised and unsupervised techniques

The Boeing Company — Seattle, WA
Machine Learning Intern — June 2019 - Aug 2019
- Created part price prediction platform for Supply Chain intended to enable savings for 40% of part inventory
- Developed multi-modal deep learning model to predict part price using parts' scale variant metadata and scale invariant visual features

National Science Foundation REU — Miami, FL
Research Intern — June 2018 - Aug 2018
- Designed and simulated algorithm to perform a homophily-based reconnaissance attack on users in a partially observable online social network to motivate better defense mechanisms

Stroll Health — San Francisco, CA
Data Science Intern — June 2017 - Aug 2017
- Enhanced price estimation and network determination models for medical imaging centers
- Designed submission for Robert Wood Johnson Care Challenge and won $50,000$ 1st place prize

Research

- **Maudgalya, N. (2021). Using Learned Image Compression for Training Accurate and Robust Convolutional Neural Networks (Master's thesis) EECS Department, University of California, Berkeley.**
  - Explored the effects of end-to-end learned data compression techniques on supervised learning models' training efficiency, generalization, and robustness

- **Maudgalya, N. (2021). Using Active Learning to Efficiently Navigate a Combinatorial Epistatic Fitness Landscape.**
  - Demonstrated that active learning discovers fitness-enriched protein sequences efficiently, enabling advantages in machine learning assisted directed evolution for protein engineering
  - Final class project for CS 294 (Machine Learning for Biology)

- **Maudgalya, N., Olshausen, B. A., Kent, S. J. (2020). Vector symbolic visual analogies. In AAAI Symposium on Conceptual Abstraction and Analogy in Natural and Artificial Intelligence.**
  - Applied vector symbolic algebra to representations learned by convolutional autoencoders with the goal of capturing human-like representations of visual analogies

- **Maudgalya, N., Peterson, J. C. (2019). Post-training dimensionality reduction of CNN layers supports better fit to early visual cortex.**
  - Placed 5th in the Algonauts: Explaining the Human Visual Brain Challenge conducted by MIT CSAIL

Skills

- **Languages**: Python, Java, C. SQL, HTML/CSS, Javascript
- **Technologies/Libraries**: PyTorch, Tensorflow, Pandas, OpenCV, Pyro, Git, Heroku, Docker, AWS, LaTeX