Chetan Parthiban

Email : chetanp@sas.upenn.edu
Mobile : (913) - 530 - 5328

EXPERIENCE

University of Pennsylvania — Philadelphia, PA
Teaching Assistant - Machine Learning — *December 2019 - May 2020*

- **MSSP 608 - Practical Machine Learning Methods**: Developed a new course from the ground up together with Elijah Mayfield that aimed to train students with only one semester of Python background to be effective machine learning practitioners. Responsibilities included developing course materials, leading weekly recitations, and holding regular office hours.
- **ESE 545 - Learning from Massive Datasets**: Work as part of a team of 4 TAs to prepare and grade homework as well as hold regular office hours for ESE 545 - a course aiming to teach how many fundamental machine learning algorithms function both in theory and in practice.

World Well Being Project — Philadelphia, PA
NLP Researcher under Dr. Lyle Ungar — *May 2019 - December 2019*

- **Bias in Language Models**: Studied bias in deep learning based language models such as BERT as well as the inadequacy of many popular measures of bias when applied to these models
- **Debiasing Word Embeddings**: Studied the conceptor framework for debiasing word embeddings derived from language models as well as the ability of neural networks to re-amplify bias when fine tuned for an end task

Computational Neuroscience Initiative — Philadelphia, PA
Research Assistant under Dr. Vijay Balasubramanian — *June 2017 - November 2019*

- **Natural Stimulus Generation**: Developed a framework for generating natural sound stimuli for the training of biologically plausible machine learning models. This includes creating an easily adjustable API for running experiments, implementing several auditory transforms, and implementing a solution to generate natural sounding background noise
- **Biologically-Plausible Computing**: Worked with a team to develop psychophysics experiments and theoretical results to support our hypothesis that temporal continuity is a key component of learning auditory objects (for example, the bark of a dog)

PROJECTS

- **Face Swapper**: An implementation of CycleGAN, with some modifications for better training like perceptual loss rather than L1 loss used for reconstruction, trained on faces to allow for facial swapping.
- **Slow Feature Analysis**: Python library that allows for the easy application fo slow feature analysis to auditory data, extracting objects through using only temporal continuity
- **PDE Solver**: MATLAB script that provides an approximate solution and visualization for a given PDE using Euler's Method

SKILLS

- **Languages**: Python (expert), C++ (itermediate), JavaScript (basic), SQL (basic)
- **Python Frameworks**: PyTorch, Pandas, Plotly, Scikit-Learn, Numpy, Matplotlib, Kivy
- **Technologies**: AWS, Git/GitHub, Linux, ROS, Microsoft Office, GAMS, LINDO
- **Coursework**: Autonomous Racing, Deep Learning, Optimization, Robotics, Statistics, Analysis, Topology

EDUCATION

University of Pennsylvania — Philadelphia, PA
Master of Science in Robotics; GPA: 4.00 — *Aug. 2019 – Dec. 2020*

University of Pennsylvania — Philadelphia, PA
Bachelor of Science in Mathematics; GPA: 3.74 — *Aug. 2016 – May 2020*

AWARDS

- **Intel Edge AI Scholar**: Received a scholarship for the Intel/Udacity Edge AI course
- **Putnam 2018**: Place in the top 20% of 2018 Putnam participants
- **INS 2016 Poster**: Presented a poster at the International Neuropsychological Society 2016 meetup