Michael Einhorn

einhorn.michael1@gmail.com
https://michaeleinhorn.github.io/Portfolio/

Skills

- Machine Learning
- Computer Vision
- Natural Language Processing
- Reinforcement Learning
- PyTorch, Keras, TensorFlow
- Finetuning large models with Deepspeed
- Python, C, C++, C#, Java
- R, SQL, Julia, Linux Shell
- AWS Serverless Development
- Agile Methodology and UML
- Software Testing with Junit
- Linear Algebra and Differential Equations
- Data Visualization in PyPlot and GGPlot
- Parallel Processing with CPU Multithreading, GPU CUDA, and MPI Distributed Computing

Education

Georgia Institute of Technology, College of Computing, Graduated May 2023
Major: Computer Science, GPA: 3.90
Concentrations: Artificial Intelligence, Modeling and Simulation
Undergraduate Thesis: Benchmarking Federated Reinforcement Learning

Work Experience:

Stanford Existential Risk Initiative Machine Learning Alignment Theory Scholars: Machine Learning Engineer Full-Time Jun – Dec 2022
Worked on an interdisciplinary team in Berkeley and London. Finetuned Language Models GPT-Neo 1.3B and GPT-Neox 20B with PPO using Deepspeed to play text adventures. Tested KL divergence and prompt engineering.

Undergraduate Thesis, Georgia Tech COAR Lab: Spring Semester 2022 and 2023
Tested for convergence and linear speedup for Federated Reinforcement Learning using Tabular Q-learning, and Convolutional Networks with PPO. Analyzed results in R with linear regression.

ML Engineer Intern, Georgia Tech Research Institute CIPHER: Full-Time Aug – Dec 2021
Developed methods to accurately determine scaling laws for neural networks to predict the amount of data needed and evaluate improvements to scaling laws. Used this procedure to test Resnet with Mixup data augmentation on the CIFAR-10 image datasets. Analyzed data with regression in R using blocking to incorporate results from multiple different experiments. Tested for heteroskedasticity and non-normality of residuals and adjusted with Iteratively Reweighted Least Squares. Wrote report on results.

AWS Developer Intern, Orca IoT: Part-Time Feb – May 2021, Full-Time Jun – July 2021
Developed and code reviewed production software for management of construction sites. Developed Serverless APIs with Python using AWS Lambda, and Cloud Formation. Deployed a Yolo model in AWS Neuron which was both more accurate and less expensive than AWS Rekognition analyzing our in-house dataset. Created a marketing tech demo for visualizing object detection boxes with real data in the SQL server. Tested models on edge devices such as the Coral TPU and Jetson Nano.

Undergraduate Researcher, CHAT (Cetacean Hearing and Telemetry): Spring Semester 2021
Developed an AI application to facilitate real time communication with dolphins. Used Cascade Classifier in OpenCV to detect dolphin whistles in a spectrogram. Tested data preprocessing, and hyperparameters for Precision, Recall, and Inference Time. Debugged multithreaded C code with Valgrind.