Andy Lee

CONTACT INFORMATION	**Email**: andylee024@gmail.com **Portfolio**: andylee024.github.io **Github**: github.com/andylee024

EDUCATION

Swarthmore College, Swarthmore, PA

B.S. Mathematics, Spring 2016

WORK EXPERIENCE

Uber ATG - Machine Learning / Motion Planning   June 2016 - Present
Advanced Technologies Group (ATG) is Uber's R&D arm for developing self-driving car technology.

- **Inverse Reinforcement Learning (IRL)** Architect and implement IRL algorithm to process 1000+ hours of self-driving logs and algorithmically tune 100+ parameters of optimization-based motion planning system. Received patent for system.

- **Optimal Control** Architect and implement trajectory-smoothing algorithm to transform noisy poses into human-like trajectories in order to generate human-like driving datasets for machine learning applications.

- **Deep Learning Simulation** Architect and implement offline simulation system for validating end-to-end deep learning approaches for self-driving.

Neurogenomics Laboratory - Scientific Collaborator   Feb 2017 - March 2018
A computational biology lab at Carnegie Mellon University conducting research on the genetic mechanisms of Alzheimers disease and the epigenetics of aging.

- **Deep Learning Infrastructure** Architect and implement general deep-learning pipeline that provide simple APIs for iterating quickly on computational biology experiments (dataset generation, model training, metrics reporting).

- **Deep Learning for Biology** Led research effort to use Attention + RNNs to identify sequence motifs for CTCF binding sites using ENCODE datasets.

TECHNICAL PROJECTS

Komorebi - Deep Learning Infrastructure
Komorebi is a general deep-learning interfaces for tensorflow. It is designed to accelerate the ability to perform deep-learning experiments by specifying abstract interfaces for datasets, models, model trainers and metrics (i.e. components needed for running a deep learning experiment). See (https://github.com/andylee024/komorebi).

Technical Notes (Machine Learning + Biology)
I have written a number of technical notes on machine learning and biology topics (e.g. reinforcement learning, variational inference, amyloid-hypothesis in Alzheimer's). See (https://andylee024.github.io/).

SKILLS

Graduate Coursework (University of Pennsylvania): Machine Learning, Computational Learning Theory, Integrated Intelligence for Robotics, Randomized Algorithms

Undergraduate Coursework: Real Analysis, Probability Theory, Advanced Statistics
Software Languages (Strong): Python
Software Languages (Intermediate): C++