Alyssa Li Dayan

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Education:

2020-PRESENT: UNIVERSITY OF CALIFORNIA BERKELEY | PHD IN COMPUTER SCIENCE, GPA 4.0/4.0
Advisor: Stuart Russell

2014-2018: MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT) | BS IN MATH WITH COMPUTER SCIENCE, GPA 5.0/5.0

Experience:

2019-2020: R&D TEAM, UBER ADVANCED TECHNOLOGY GROUP (ATG), SAN FRANCISCO | RESEARCH SCIENTIST
Developed a deep generative model to simulate 3D pedestrian body dynamics.

2018-2019: PREDICTION TEAM, UBER ATG, SAN FRANCISCO | RESEARCH ENGINEER
Software engineering and deep learning model development for trajectory prediction for self-driving, with a focus on estimating uncertainty.

SPRING 2018: VISUAL AI LAB, IBM RESEARCH, CAMBRIDGE MA | RESEARCH INTERN
Trained seq2seq VAEs to visualize and analyze 1000s of drawings. (writeup) selected for display at the NeurIPS Creativity Workshop 2020
Used information theory to create a game that sequentially asks players to draw different objects to guess their country of origin. (writeup)

FALL 2017-SPRING 2018: COCOSCI LAB, DEPARTMENT OF BRAIN AND COGNITIVE SCIENCES, MIT | UNDERGRADUATE RESEARCHER
Developed a model in WebPPL for learning preferences for diverse object collections based on utility functions and Bayesian inference.
Designed behavioral experiments to fit and test the model; preliminary results suggest it can accurately predict human decision making.

FALL 2016-SPRING 2018: FLAVELL LAB, PICOWER INSTITUTE FOR LEARNING AND MEMORY, MIT | UNDERGRADUATE RESEARCHER
Predicted *C. elegans* behavior from neural activity with high accuracy and identified key neurons using feed forward neural networks.
Used dimensionality reduction methods to visualize neural data; investigated underlying behavioral states with hidden Markov models.
Improved image analysis algorithms for extracting *C. elegans* body posture and segmenting specific neurons across video frames.

SUMMER 2016: R&D TEAM, SEVEN BRIDGES GENOMICS, CAMBRIDGE MA | RESEARCH INTERN
Designed algorithms (now patented) to align DNA sequences to a graph reference genome orders of magnitude faster than existing methods.
Performed statistical analyses on frequencies of genetic variants and used the results to simplify the graph genome.

Selected Awards and Honors:

2020: HERTZ FOUNDATION GRADUATE FELLOWSHIP | *1 OF 16 RECIPIENTS*
Five-year fellowship with an annual stipend of $34,000 for graduate students in STEM

2020: EECS EXCELLENCE AWARD, UC BERKELEY
A $5000 scholarship for EECS students demonstrating an “outstanding academic record”

2018: RANDOLPH G. WEI UNDERGRADUATE RESEARCH AWARD, MIT | *1 OF 2 RECIPIENTS*
Award given for “outstanding work at the interface of the life sciences and engineering”; for my contributions in the Flavell lab.

2017: AMGEN SCHOLARS PROGRAM, MIT | *AMGEN SCHOLAR (20 SELECTED FROM 1000 APPLICANTS)*
Awarded funding to conduct faculty mentored summer research in biotech-related fields and attend a symposium at UCLA.

2014: MATH, PHYSICS AND LINGUISTICS OLYMPIADS | *GOLD AWARDS (TOP 100 NATIONWIDE); UK EGMO TEAM RESERVE (TOP 5 NATIONWIDE)*

Publications:

HIERARCHICAL ABSTRACTION FOR COMBINATORIAL GENERALIZATION IN OBJECT REARRANGEMENT | *IN SUBMISSION TO ICLR, 2022*

Michael Chang, **Alyssa Li Dayan**, Franziska Meier, Thomas L. Griffiths, Sergey Levine, Amy Zhang

MULTIXNET: MULTICLASS MULTISTAGE MULTIMODAL MOTION PREDICTION | *IEEE INTELLIGENT VEHICLES SYMPOSIUM, 2021*

N. Djuric, H. Cui, Z. Su, S. Wu, H. Wang, F. Chou, L. San Martin, S. Feng, R. Hu, Y. Xu, **A. Dayan**, S. Zhang, B. Becker, G. Meyer, C. Vallespi-Gonzalez, C. Wellington

A NEURAL CIRCUIT FOR FLEXIBLE CONTROL OF BEHAVIORAL STATES | *ELIFE, 2021*

N. Ji, G. Madan, G.Fabre, **A. Dayan**, C. Baker, I. Nwabudike, S. Flavell

SYSTEMS AND METHODS FOR ALIGNING SEQUENCES TO GRAPH REFERENCES | *US PATENT NO. US10319465B2, 2019*

Wan-Ping Lee and **Alyssa Dayan**