Yanlai Yang

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EDUCATION

New York University   Starting September 2022
Degree: Ph.D. in Computer Science

University of California, Berkeley   August 2018 – August 2022
Degree: B.A. in Computer Science & Applied Math; **Cumulative GPA:** 4.00
Selected Coursework: Deep Reinforcement Learning, Robotics, Human-Robot Interaction, Machine Learning, Artificial Intelligence, Optimization, Algorithms, Probability, Discrete Math, Linear Algebra, Real Analysis, Numerical Analysis.

AWARDS AND HONORS

- **Mark D. Weiser Excellence in Computing Scholarship** (UC Berkeley 2020-21; one student in CS every year)
- **Percy Lionel Davis Award for Excellence in Scholarship in Mathematics** (UC Berkeley 2022)
- **Outstanding Graduate Student Instructor Award** (UC Berkeley 2020-21, nomination rate < 10%)
- **Best Machine Learning Project** in Cal Hacks 5.0 (2018)
- **Edward Frank Kraft Award** for Freshmen (UC Berkeley 2018, top 3% of the freshman class)

PUBLICATIONS AND PREPRINTS

- **Bridge Data: Boosting Generalization of Robotic Skills with Cross-Domain Datasets**

  Frederik Ebert*, **Yanlai Yang***, Karl Schmeckpeper, Bernadette Bucher, Georgios Georgakis, Kostas Daniilidis, Chelsea Finn, Sergey Levine.

  Robotics: Science and Systems (RSS), 2022

  Project Website / Blog Post

- **Garbage in, garbage out? Do machine learning application papers in social computing report where human-labeled training data comes from?**

  Geiger, R. Stuart, Kevin Yu, **Yanlai Yang**, Mindy Dai, Jie Qiu, Rebekah Tang, and Jenny Huang.

  Conference on Fairness, Accountability, and Transparency (ACM FAT), 2020*

RESEARCH EXPERIENCE

Undergraduate Researcher   February 2021 – Current
Berkeley Artificial Intelligence Research | Berkeley, CA   Supervisor: Prof. Sergey Levine, RAIL Lab
Main Project: Boosting Generalization of Robotic Skills with Cross-Domain Datasets *(RSS 2022)*

- Curated large dataset of 7200 human demonstrations across 10 different kitchen environments and 71 tasks
- Carried out extensive experiments to demonstrate generalizability of imitation learning policies on real WidowX robot. Showed 2x performance improvement by jointly training with the dataset, compared to single-task training.

Undergraduate Researcher   May 2020 – January 2021
Berkeley Artificial Intelligence Research | Berkeley, CA   Supervisor: Prof. Pieter Abbeel, Robot Learning Lab
Main Project: Self-driving with Reinforcement Learning and Semantic Representations

- Collected self-driving data with the Carla Simulator and trained semantic segmentation and object detection models
- Aggregated the visual information to train deep imitation and RL policies that adhere to traffic lines in Carla

Undergraduate Researcher   December 2019 – June 2020

Berkeley Artificial Intelligence Research | Berkeley, CA   Supervisor: Dr. Xiaolong Wang, Postdoctoral fellow

Project: Self-supervised Learning for Object Detection in Videos Using GPS Driving Data

- Designed auxiliary tasks such as predicting change in distance and angle between two images by exploiting correspondence between images and GPS locations
- Improved object detection in the BDD driving video dataset with end-to-end self-supervised learning methods

Research Apprentice   September 2019 – December 2019

Berkeley Institute for Data Science | Berkeley, CA   Supervisor: Chris Kennedy, Ph.D. student

Project: Measuring a Spectrum of Hate Speech to Counter-speech in Social Media

- Trained deep learning NLP models (LSTM, USE, BERT) to predict a continuous "hate score" to online comments
- Applied item response theory to process annotation data and estimate annotator bias

Research Apprentice   October 2018 – June 2019

Berkeley Institute for Data Science | Berkeley, CA   Supervisor: Dr. Stuart Geiger, Staff Researcher

Project: Garbage In, Garbage Out? Do Machine Learning Application Papers in Social Computing Report Where Human-Labeled Training Data Comes From? *(ACM FAT* 2020)*

- Annotated 160 ML application papers in social computing on their collection of training data and annotations
- Designed an "annotation score" that evaluates the quality and transparency of each paper's data collection process
- Explored correlations between the annotation score and different factors, including time, topic, and publication type

TEACHING EXPERIENCE

Student Lecturer   June 2022 – August 2022

EECS Department of UC Berkeley | Berkeley, CA   Course: Intro to Artificial Intelligence

Supervisor: Dr. Michael Ball

- Give 12 lectures in AI to >200 undergraduate students in the UC Berkeley Summer Session
- Manage a group of 17 Teaching Assistants to run the discussion sections and logistics of the course

Undergraduate Student Instructor (UGSI)   January 2020 – May 2022

EECS Department of UC Berkeley | Berkeley, CA   Course: Intro to Artificial Intelligence

Supervisors: Prof. Anca Dragan, Prof. Stuart Russell, Prof. Dawn Song, Prof. Pieter Abbeel

- Co-headed exam creation for 3 semesters in a row: organized the creation, proctoring, and grading of exams
- Led discussion sections to help students review lecture material and prepare for exams
- Held office hours to answer students' questions; Held one-on-one advising sessions with students

Associate Mentor   January 2019 – December 2019

Computer Science Mentors (CSM Berkeley) | Berkeley, CA

- Led weekly small group mentoring sections
- Gave some students extra one-on-one support on course materials and exam prep

INTERESTS

Contract Bridge: Core member of the school bridge club; competed in national and collegiate bridge tournaments.

TECHNICAL SKILLS

Technical skills: Python (NumPy, PyTorch, TensorFlow, matplotlib, pandas); Java; C; ROS; git.