Kevin Lu

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EDUCATION

UC BERKELEY | B.S. in Electrical Engineering and Computer Science (EECS)
Aug 2018 – May 2022 (Expected) | Berkeley, CA
Selected coursework (GPA: 4.00/4.00):

- Graduate-Level: Advanced Robotics, Deep Unsupervised Learning, Population Games, Theoretical Statistics
- Undergraduate-Level: Machine Learning, Probability, Artificial Intelligence, Convex Optimization, Algorithms

RESEARCH

ROBOT LEARNING LAB | Undergraduate Researcher
June 2019 – Present | Berkeley, CA
Advised by Igor Mordatch, Aditya Grover, and Pieter Abbeel. I am broadly interested in decision making, deep learning, and artificial intelligence, particularly in the consideration of uncertainty in risk-critical sequential settings.

"Reset-Free Lifelong Learning with Skill-Space Planning." Kevin Lu, Aditya Grover, Pieter Abbeel, Igor Mordatch.
Presented as a poster at ICLR 2021. Contributed talk (~5% of accepted papers) at NeurIPS 2020 Deep RL Workshop.
We argue that long-horizon planning in the skill space is a unified approach for reset-free RL, performing skill discovery both online and offline for use in planning, showing that we can plan for longer horizons than prior works and handle challenges in the reset-free setting.

"Efficient Empowerment Estimation for Unsupervised Stabilization." Ruihan Zhao, Kevin Lu, Pieter Abbeel, Stas Tiomkin.
Presented as a poster at ICLR 2021.
We propose an efficient, unbiased empowerment estimator and show it learns a more accurate empowerment landscape than prior work.

"Adaptive Online Planning for Continual Lifelong Learning." Kevin Lu, Igor Mordatch, Pieter Abbeel.
Contributed talk (~6% of accepted papers), NeurIPS 2019 Deep RL Workshop. [website]
AOP interpolates between model-based planning and model-free RL on-the-fly in reset-free settings with changing dynamics for fast, safe adaptation and cheaper planning, avoiding sink states by constraining the long-term regret via estimating value function uncertainty.

HEARST LAB | Undergraduate Researcher
Sept 2018 – Mar 2019 | Berkeley, CA
Worked with Katie Stasaski and Marti Hearst on developing an NLP tutoring system that adapts to the learner's style and types of mistakes. Personally worked on data collection and experimented with classification models (seq2seq, BERT, etc).

TEACHING

HEAD TEACHING ASSISTANT | UC Berkeley, EECS 126 Probability and Random Processes
Jan 2019 – Present | Berkeley, CA
Head TA for EECS 126 (Sp21, Fa20). Responsible for organizing class logistics, creating content, grading, teaching, organizing staff, etc. Previously: EECS 126 TA (Fa19, Sp20); CS 70 Reader (Sp19); CSM CS 70 Mentor (Sp19).

PROJECTS/CODE

LIFELONG RL CODEBASE
Aug 2020 – Present | Python
Open-source RL codebase focused on research flexibility and modularity. Contains only public Pytorch implementations of several model-based and skill discovery algorithms.

RL DYNAMICS MODEL SPECIALIZATION
Nov 2019 – May 2020 | Python | Class Project
New RL model learning method for model-based policy optimization.

ESPORTS DATA ANALYSIS
Oct 2019 | Python
Analyzed professional match stats from eSport League of Legends.

GOOGLE SHEETS CALENDAR
Aug 2018 – Sept 2018 | Javascript
Developed a todo-list/overview in Sheets that syncs with Calendar.

MISCELLANEOUS

HONORS & AWARDS

- Eta Kappa Nu (EECS Honors Society) 2019
  Top third of students with junior standing
- Kraft Award for Freshmen 2018
  Awarded to ~4% of UC Berkeley freshmen
- USACO, Platinum Rank (Algorithms) 2017
  Highest rank of USA Computing Olympiad
- FBLA, 2nd in US (Cyber Security) 2017
  Placed 2nd out of 200 at national competition

PROGRAMMING LANGUAGES
Primarily Python (Pytorch/etc.), some experience with: C/C++, Java, Javascript, MySQL