

MAXIMILIAN DU

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GitHub: MaxDu17

Undergraduate student-researcher interested in reinforcement learning, behavior cloning, and other forms of robot learning

Work/Volunteer Experience

CURIS Participant, IRIS Lab Researcher, Stanford, CA

Researcher at Stanford IRIS Lab | Jan 2021 - Present

Working on a Behavior Cloning robot-learning project under the supervision of Suraj Nair, Prof. Chelsea Finn, and Prof. Dorsa Sadigh

Stanford University, Stanford, CA

CS 106A/B Section Leader | January 2021 - Present

Led weekly instructive sections for the popular CS106 Stanford series, and graded assignments & tests.

Stanford University, Stanford, CA

Stanford Splash Lecturer | Nov 2021 - Present

Gave lectures to high school students on the connections between animal training and reinforcement learning.

Education

Stanford University, Stanford, CA

CS Major (AI), Creative Writing Minor | 2020-2024 | GPA: 4.1 / 4.0

Fayetteville-Manlius High School, Manlius, NY

High School Honors Diploma | 2016-2020 | GPA: 4.0 / 4.0

Selected Research Projects

Learning Efficiently from Corrections in Behavior Cloning (Ongoing)

I am trying to improve data efficiency by having the robot use human corrections to up-weight existing data, so that it has more relevant samples to learn from its mistakes.

Play it by Ear: Learning Skills amidst Occlusion through Audio-Visual Imitation Learning (RSS 2022)

Demonstrated that audio data can augment visual and proprioceptive data to improve success rates in certain tasks, like extracting keys from a bag. Wrote code for various model-free RL algorithms on simulated and real robot environments. Created a data pipeline for Oculus Quest demo collections that was adopted by other researchers. Collected hundreds of demos on a Franka-Emika Panda Robot

Improving LSTM Neural Networks for Better Short-Term Wind Power Predictions (REPE 2019)

Trained a modified Long Short-Term Memory Neural Network (LSTMs) and implemented weather forecast contextualization to improve ultrashort wind power forecasts

Recognitions

★ **Research Conference Presentation**
Robotics: Science and Systems (RSS)
2022

★ **Finalist**
Lunsford Award for Oral Research Presentation
2022

★ **Research Conference Presentation**
IEEE Renewable Energy and Power Engineering (REPE)
2019

Languages & Libraries

Python ●●●●●
Numpy, Matplotlib, PyTorch ●●●●●
LaTeX ●●●●●
Tensorflow ●●●●●
C / C++ ●●●●●

Machine Learning

Model-Free RL ●●●●●
Imitation Learning ●●●●●
Image Models ●●●●●
MuJoCo / Robosuite ●●●●●
Franka-Emika Panda Robot ●●●●●
Probabilistic Graphical Models ●●●●●

Content Delivery

Research / Education Presentations ●●●●●
Narrative Interviews ●●●●●
Audio Recording & Mixing ●●●●●
DSLR Camera + Photoshop ●●●●●
Creative Nonfiction Writing ●●●●●
Video Editing ●●●●●

Electronics

Oscilloscope ●●●●●
Soldering (THT + SMT) ●●●●●
PCB Design ●●●●●