

## Education

### Stanford University

September 2021 - Present

#### B.S. Electrical Engineering and Computer Science

- *Funding Awards:* I am graciously supported by a DoD NDSEG Fellowship, roughly 2% selection rate.
- *Research Interest:* My research focuses on learning for intelligent decision-making systems.

### University of California, Berkeley

August 2017 – May 2021

#### B.S. Electrical Engineering and Computer Science

GPA: 4.0/4.0

- *Academic Awards:* Highest Honors, top 3% of graduates; Regents and Chancellors Scholar, top <2% incoming
- *Research Awards:* 2021 CRA Undergrad Research Award Honorable mention

## Experience

### Robot Learning Lab, Undergraduate Researcher

November 2019 – May 2021

- Working under the supervision of Professors Pieter Abbeel (UC Berkeley) and Lerrel Pinto (NYU) on problems relating to efficient reinforcement learning and robotics. First-authored two papers in nine-months (see below).

### Citadel Global Quantitative Strategies, Intern

June 2019 – August 2019

- Developed C++ proxy and API to improve job monitoring, KDB testing scripts for multi-server trading systems.
- Created APIs for trade messages, unified with query systems under a central platform for easy use by traders.
- Explored techniques for reducing RAM usage of decision tree training libraries. Achieved 75% load reduction.

### Intel AI Products Group, Intern

May 2018 – August 2018

- Produced demo-products for Intel OpenVino Model Optimizer. Computer vision project [featured on intel's blog](#).
- Developed workflows for AWS model training, explored gradient based explanations for CV and NLP models.

## Publications

### Improving Long-Horizon Imitation Through Instruction Prediction

Under Review

Donald Joseph Hejna III, Pieter Abbeel, Lerrel Pinto. <https://openreview.net/pdf?id=1Z3h4rCLvo->

- Imitation learning struggles in long-horizon, combinatorial domains. We show that modeling language instructions drastically improves task performance and generalization in low data regimes.

### Task-Agnostic Morphology Evolution

Published at ICLR 2021

Donald Joseph Hejna III, Pieter Abbeel, Lerrel Pinto. <https://openreview.net/pdf?id=CGQ6ENUMX6>

- We introduce the first unsupervised algorithm for agent design optimization using unsupervised objectives.
- Empirically, we outperform task-supervised algorithms in multi-task settings while being 4x as fast.

### Hierarchically Decoupled Imitation for Morphological Transfer

Published at ICML 2020

Donald Joseph Hejna III, Pieter Abbeel, Lerrel Pinto. <https://arxiv.org/abs/2003.01709>

- We overcome different input/output spaces using a hierarchical structure and contribute two key algorithmic improvements motivated by information theory to overcome the domain shift induced in transfer.
- Empirically show that transferring policies across agents offers massive improvements in sample efficiency.

### Improving Latent Representations via Explicit Disentanglement

Course Project – Unsupervised Learning

Donald Joseph Hejna III\*, Ashwin Vangipuram\*, Kara Liu\*. <http://joeyhejna.com/files/disentanglement.pdf>

- Introduce three methods for disentangling latent representations: cycle loss, divergence penalty, factor prediction.

## Activities and Projects

### Research Lightning

<https://github.com/jhejna/research-lightning>

- A lightweight open-source framework used for quickly implementing deep learning algorithms in pytorch.

### EECS Department, Teaching Assistant

August 2019 - Present

- EECS 127: Optimization Models. Fall 2020. Teaching sections. Course includes lin alg., duality, convex models
- CS 189: Machine Learning. Fall Spring 2020. Weekly sections, office hours, creating questions and content.
- CS 70: Discrete Math and Probability Theory. Fall 2019. Taught two weekly discussion sections, office hours.

**Programming:** Python, Java, C, Pytorch, Tensorflow, AWS, Docker, Unix, HTML/CSS, C, C++ and Go (limited)