Lerrel Pinto

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Affiliation

New York University Sep 2020 – Current
Assistant Professor, Computer Science at Courant Institute
Disciplines: Robotics, Machine Learning, AI

Education

Carnegie Mellon University Aug 2014 – Aug 2019
Masters (MS) and Doctorate in Robotics (PhD)
Advisor: Abhinav Gupta
Thesis: Data Centric Robot Learning

Indian Institute of Technology Guwahati Jul 2010 – May 2014
Mechanical Engineering (Major), Electrical Engineering (Minor)
Advisors: Santosha K. Dwivedy, Prithwijit Guha

Academic Positions

University of California, Berkeley Aug 2019 – Aug 2020
Postdoctoral researcher (Mentors: Alexei Efros, Pieter Abbeel)

Google Brain Jan 2018 – May 2018
Research Intern (Mentors: James Davidson, Vincent Vanhoucke)

OpenAI May 2017 – Aug 2017
Research Intern (Mentors: Wojciech Zaremba, Pieter Abbeel)

Kyushu University May 2013 – Jul 2013
Research Intern (Mentor: Kazuo Kiguchi)

Hanyang University May 2012 – Jul 2012
Research Intern (Mentors: Chang-Soo Han, Ji Yeong Lee)

Honors and Awards

- Packard Fellowship for Science and Engineering 2023
- MIT Technology Review's Innovators under 35 (TR35) 2023
- Best Student Paper Award at RSS 2023
- Finalist, Best Paper Award at CoRL 2022
- Finalist, Best Paper Award at the RoboAdapt workshop at CoRL 2022
- Outstanding Paper Award at the LangRob workshop at CoRL 2022
- Amazon Research Award in Robotics 2022
- Finalist, Microsoft Faculty Fellowship 2021
- Amazon Research Award in Robotics 2021
- Finalist, Best Paper on Cognitive Robotics at IROS 2019

- SCS Dissertation Award Honorable Mention 2019
- Best Student Paper Award at ICRA 2016
- The Honda Young Engineer and Scientist (YES) award 2013
- Rank 1 at the Gulf Physics Olympiad 2010

In the Popular Press

- Self-supervised grasping covered by MIT Review, Futurism and IEEE Spectrum.
- Multi-task learning covered by TechCrunch, RT and QUARTZ.
- Adversarial robotics covered by GIZMODO, IEEE Spectrum and Digital Trends.
- Learning to fly covered by BuzzFeed, IEEE Spectrum and Popular Mechanics.
- Low cost robotics covered by WIRED and VentureBeat.
- Adversarial human games covered by WIRED, Tech Xplore and Daily Mail.
- Learning from audio covered by Wall Street Journal, TechCrunch and TechRepublic.
- Imitation from assistive tools covered by VentureBeat, hackster.io and Tech Xplore.

Talks

- *Four Lessons for Building General-Purpose Robots*
  - Princeton Robotics Seminar Oct 2023
  - Stanford Vision and Learning Seminar Oct 2023
  - UCSD Robotics Seminar Oct 2023
  - USC Robotics Seminar Oct 2023
  - UC Berkeley CPAR/BAIR/Robotics Seminar Oct 2023
- *A Constructivist's Guide to Robot Learning*
  - Samsung AI Seminar Jul 2023
  - Hyundai Robotics Seminar Jul 2023
  - Naver Labs Seminar Jul 2023
  - CVPR Workshop on Dexterous Manipulation Jun 2023
  - CMU RI Seminar Mar 2023
- *Towards Building Large Robot Models*
  - UT Austin Seminar Feb 2023
  - UPenn Seminar Feb 2023
  - CoRL Workshop on Long Horizon Robotics Dec 2022
  - UC Berkeley Workshop on Large-Scale Robot Learning Oct 2022
- *Introduction to Deep Decision Making*
  - MIT Computational Physics School for Fusion Research Aug 2022
- *Supercharging Robotic Imitation from Pixels*
  - CoRL Workshop on Human Robot Alignment Dec 2022
  - 2022 World 5G Convention Aug 2022
  - Covariant AI Seminar Jul 2022
  - Google Robotics Seminar Jul 2022
  - UC Berkeley Computer Vision Seminar Jul 2022
  - RSS Workshop on Imitation Learning Jun 2022

- *The Why, Where, and How of Robot Benchmarking*
  RSS Workshop on Benchmarking in Robotics — Jun 2022
- *The Surprising Effectiveness of Representation Learning for Robotics*
  ETHZ Robot Autonomy Seminar — May 2022
- *Towards General Purpose Dexterity*
  Honda R&D — Apr 2022
- *Towards Robot Learning for the Real World*
  Cornell Robotics Seminar — Feb 2022
  IITG AI Seminar — Feb 2022
  UNC Applied Reinforcement Learning Seminar — Feb 2022
  Intel Embodied Learning Seminar — Feb 2022
  USC Advances in Computing Seminar — Feb 2022
- *Rethinking the Role of Representation Learning in Robotics*
  NESS-NextGen Data Science Day — Nov 2021
  ICCV Workshop on Simulation Technology for Embodied AI — Oct 2021
  FAIR Embodied AI Seminar — Oct 2021
  Auburn University Seminar — Sep 2021
  IROS Workshop on Combing Learning and Motion Planning — Aug 2021
  Microsoft NYC Seminar — Apr 2021
- *Robot Learning in the Wild*
  Cornell Robotics Seminar — Nov 2020
  MILA Robotics Seminar — Oct 2020
  NVIDIA Robotics Seminar — Sep 2020
  INRIA AI Seminar — Sep 2020
  Berkeley AI Research Seminar — Sep 2020
  NYU CDS Seminar — Sep 2020
- *Diverse Data and Efficient Algorithms for Robot Learning*
  NYU CILVR Seminar — Aug 2020
  MIT AI Seminar — May 2020
- *Imitation Learning from Humans and other Robots*
  RSS 2020 Workshop on Imitation Learning — Jul 2020
- *Data Centric Robot Learning*
  Samsung AI Research Seminar — Mar 2020
  CMU Thesis Talk — Aug 2019
  UC Berkeley AI Talk — Aug 2019
- *Learning for Grasping*
  CVPR 2019 Workshop on Bringing Robotics to CV — Jun 2019
- *Rethinking the Relationship between Data and Robotics*
  UC Berkeley Seminar — Apr 2019
  NYU CS Colloquium — Mar 2019
  CMU Robotics Seminar — Feb 2019
  University of Michigan Seminar — Feb 2019
  University of Maryland Seminar — Feb 2019

- *Using Simulators for Fast, Efficient, and Generalizable Learning*
  RPAD Lab Reading Group at CMU — Nov 2018
- *Generalization Beyond Robustness*
  FAIR Summit — Oct 2018
- *Scaling up Robot Learning*
  Thesis Proposal at CMU — Jun 2018
- *Adversarial Methods for Robot Learning*
  Workshop on Adversarial Robotics at RSS 2018 — Jun 2018
- *Asymmetric Actor Critic*
  Oral paper talk at RSS 2018 — Jun 2018
- *Scaling Self-Supervision for Robot Learning*
  Google Brain Seminar — Jun 2017
  OpenAI — Dec 2016
- *Robust Adversarial Reinforcement Learning*
  Oral paper talk at ICML 2017 — Aug 2017
- *Multi-Task Learning for Robotics*
  Oral paper talk at ICRA 2017 — May 2017
- *Physical Adversaries for Grasping*
  Oral paper talk at ICRA 2017 — May 2017
- *Learning Visual Representations via Physical Interactions*
  Oral paper talk at ECCV 2016 — May 2017
- *Supersizing Self-Supervision for Grasping*
  CMU RI Seminar talk 2016 — Sep 2016
  Oral paper talk at ICRA 2016 — May 2016

Service

Area Chair or equivalent

- International Conference on Learning Representations (ICLR) — 2022-
- Conference on Neural Information Processing Systems (NeurIPS) — 2022-
- International Conference on Machine Learning (ICML) — 2022-
- IEEE International Conference on Robotics and Automation (ICRA) — 2022-
- Conference on Robot Learning (CoRL) — 2021-
- Robotics: Science and Systems (RSS) — 2021-
- AAAI Conference on Artificial Intelligence (AAAI) — 2020-
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) — 2020-

Reviewer

- IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI) — 2019-
- Conference on Neural Information Processing Systems (NeurIPS) — 2019-
- International Conference on Machine Learning (ICML) — 2019-

- ACM SIGGRAPH 2018-
- Asian Conference on Computer Vision (ACCV) 2018-
- IEEE International Conference on Robotics and Automation (ICRA) 2022-
- European Conference on Computer Vision (ECCV) 2018-
- Computer Vision and Pattern Recognition (CVPR) 2018-
- IEEE Transactions on Robotics (T-RO) 2018-
- Humanoids 2018-
- Conference on Robot Learning (CoRL) 2017-
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2017-
- RA-L - IEEE Robotics and Automation Society 2017-
- The International Journal of Robotics Research (IJRR) 2017-

Workshops

- Organizer of Workshop on Dexterous Manipulation, RSS 2023
- Organizer of Workshop on Vision Pretraining for Robotics, CVPR 2023
- Organizer of Workshop on Unsupervised Reinforcement Learning, ICML 2021
- Organizer of Workshop on Bringing Robotics to the CV Community, CVPR 2019
- Organizer of Workshop on Automating Robot Experiments, IROS 2019
- Program Committee of Workshop on Meta-Learning, NeurIPS 2019
- Program Committee of Workshop on Deep RL, NeurIPS 2019
- Program Committee of Workshop on Deep RL, NeurIPS 2018
- Program Committee of Workshop on Exploration in RL, ICML 2018
- Program Committee of Workshop on Action and Anticipation, ECCV 2016

Departmental Service

- NYU, Mentor at Pathways to AI Program 2022
- NYU, Mentor at GSTEM Program 2022
- NYU, Center for Data Science Undergraduate Research Program 2021-2022
- NYU, AI Faculty Search Committee Member 2020-2022
- NYU, PhD Open House Visit Organizer 2021-2022
- NYU, PhD Admissions Committee Member 2020-2022
- NYU, Dean's Undergraduate Research Fund Committee Member 2020-2022
- UC Berkeley, PhD Admissions Committee 2020
- CMU, RoboOrg Treasurer 2015-2016
- CMU, MSCV Admissions Committee 2019
- NYU, Thesis Committee Member: Zachary Ferguson, Trieu Trinh, David Brandfonbrener, Ilya Kostrikov
- NYU, PhD Qualifier Committee Member: Trieu Trinh, David Brandfonbrener, Ilya Kostrikov, Denis Yarats
- CMU, Master's Thesis Committee Member: Dhiraj Gandhi, Rawal Khirodkar, Wenxuan Zhou, Maximilian Sieb, Edward Ahn
- CMU, PhD Research Qualifier Committee Member: Xian Zhou, Xingyu Lin

Teaching

- Instructor, Introduction to Machine Learning at NYU — Fall 2022
- Instructor, Introduction to Robot Intelligence at NYU — Spring 2022
- Instructor, Deep Reinforcement Learning at NYU — Fall 2021, '20
- Instructor, Big Ideas in AI at NYU — Spring 2021
- Guest Lecturer, Deep RL and Control CMU 10-703 — Spring 2018
- Teaching Assistant, Visual Learning and Recognition CMU 16-824 — Spring 2018, '17
- Teaching Assistant, Computer Vision CMU 16-720 — Fall 2015

Current Students

- PhD: Benjamin Evans, Mahi Shafiullah, Denis Yarats, Ulyana Piterbarg, Anthony Chen, Siddhant Haldar, Nikhil Bhattasali, Jeff Cui, Gaoyue Zhou.
- Masters: Anant Rai, Irmak Guzey, Venkatesh Pattabiraman, Aadhithya Iyer.
- Undergraduates: Yibin Wang.

Past Students

- Undergraduates and Masters: Abitha Thankaraj (next PhD at CMU), Jeff Cui (next PhD at NYU), Jyo Pari (next PhD at MIT), Duo Zhang (next PhD at Rutgers), Pratyusha Sharma (next PhD at MIT), Dhiraj Gandhi (next at FAIR, Nimble AI), Yilin Wu (next MS at Stanford), Wilson Yan (next PhD at UC Berkeley), Alexander Li (next PhD at CMU), Yunzhi Zhang (next PhD at Stanford), Sarah Young (next PhD at CMU), Wenxuan Zhou (next PhD at CMU), Joey Hejna (next PhD at Stanford), Alexander Gao (next PhD at UMD), Violet Fu (next PhD at UMichigan), Mehul Damani (next PhD at MIT), Latavia Thompson (next PhD at Yale), Bryan Chen (next MS at UC Berkeley), Sneha Silwal (next at Meta AI), Karanbir Chahal (next at NVIDIA), Mike Urciuoli (next at Microsoft).
- High School: Tobias Alam, Luke Feldman.

Publications

[48] *Dexterity from Touch: Self-Supervised Pre-Training of Tactile Representations with Robotic Play*
Irmak Güzey, Ben Evans, Soumith Chintala, **Lerrel Pinto**.
CoRL 2023.

[47] *That Sounds Right: Auditory Self-Supervision for Dynamic Robot Manipulation*
Abitha Thankaraj, **Lerrel Pinto**.
CoRL 2023.

[46] *Teach a Robot to FISH: Versatile Imitation from One Minute of Demonstrations*
Siddhant Haldar, Jyothish Pari, Anant Rai, **Lerrel Pinto**.
RSS 2023. (**Best Student Paper Award**)

[45] *CLIP-Fields: Weakly Supervised Semantic Fields for Robotic Memory*
Nur Muhammad Mahi Shafiullah, Chris Paxton, **Lerrel Pinto**, Soumith Chintala, Arthur Szlam.
RSS 2023. (**Outstanding Paper Award at LangRob at CoRL 2022**)

[44] *From Play to Policy: Conditional Behavior Generation from Uncurated Robot Data*
Zichen Jeff Cui, Yibin Wang, Nur Muhammad Mahi Shafiullah, **Lerrel Pinto**.
ICLR 2023. (**Notable top 5% paper**)

[43] *Learning Simultaneous Navigation and Construction in Grid Worlds*
Wenyu Han, Haoran Wu, Eisuke Hirota, Alexander Gao, **Lerrel Pinto**, Ludovic Righetti, Chen Feng.
ICLR 2023.

[42] *Holo-Dex: Teaching Dexterity with Immersive Mixed Reality*
Sridhar Pandian Arunachalam, Irmak Güzey, Soumith Chintala, **Lerrel Pinto**.
ICRA 2023.

[41] *Dexterous Imitation Made Easy: A Learning-Based Framework for Efficient Dexterous Manipulation*
Sridhar Pandian Arunachalam, Sneha Silwal, Ben Evans, **Lerrel Pinto**.
ICRA 2023.

[40] *Watch and Match: Supercharging Imitation with Regularized Optimal Transport*
Siddhant Haldar, Vaibhav Mathur, Denis Yarats, **Lerrel Pinto**.
CoRL 2022. (**Finalist for Best Paper Award**)

[39] *Behavior Transformers: Cloning k modes with one stone*
Nur Muhammad Mahi Shafiullah, Zichen Jeff Cui, Ariuntuya Altanzaya, **Lerrel Pinto**.
NeurIPS 2022. (**Nominated for Outstanding Paper Award**)

[38] *Playful Interactions for Representation Learning*
Sarah Young, Pieter Abbeel, **Lerrel Pinto**.
IROS 2022.

[37] *Learning Visual Robotic Control Efficiently with Contrastive Pre-Training and Data Augmentation*
Albert Zhan, Philip Zhao, **Lerrel Pinto**, Pieter Abbeel, Michael Laskin.
IROS 2022.

[36] *The Surprising Effectiveness of Representation Learning for Visual Imitation*
Jyothish Pari, Nur Muhammad Shafiullah, Sridhar Pandian Arunachalam, **Lerrel Pinto**.
RSS 2022.

[35] *Context is Everything: Implicit Identification for Dynamics Adaptation*
Ben Evans, Abitha Thankaraj, **Lerrel Pinto**.
ICRA 2022.

[34] *One After Another: Learning Skills for a Changing World*
Nur Muhammad Shafiullah, **Lerrel Pinto**.
ICLR 2022.

[33] *Mastering Visual Continuous Control: Improved Data-Augmented Reinforcement Learning*
Denis Yarats, Rob Fergus, Alessandro Lazaric, **Lerrel Pinto**.
ICLR 2022.

[32] *RB2: Robotic Manipulation Benchmarking with a Twist*
Sudeep Dasari, Jianren Wang, Joyce Hong, Shikhar Bahl, Yixin Lin, Austin S Wang, Abitha Thankaraj, Karanbir Singh Chahal, Berk Calli, Saurabh Gupta, David Held, **Lerrel Pinto**, Deepak Pathak, Vikash Kumar, Abhinav Gupta.
NeurIPS 2021.

[31] *URLB: Unsupervised reinforcement learning benchmark*
Michael Laskin, Denis Yarats, Hao Liu, Kimin Lee, Albert Zhan, Kevin Lu, Catherine Cang, **Lerrel Pinto**, Pieter Abbeel.
NeurIPS 2021.

[30] *State-only imitation learning for dexterous manipulation*
Ilija Radosavovic, Xiaolong Wang, **Lerrel Pinto**, Jitendra Malik.
IROS 2021.

[29] *Reinforcement Learning with Prototypical Representations*
Denis Yarats, Rob Fergus, Alessandro Lazaric, **Lerrel Pinto**.
ICML 2021.

[28] *Learning Cross-Domain Correspondence for Control with Dynamics Cycle-Consistency*
Qiang Zhang, Tete Xiao, Alexei A. Efros, **Lerrel Pinto**, Xiaolong Wang.
ICLR 2021. (**Oral Presentation**)

[27] *Self-Supervised Policy Adaptation during Deployment*
Nicklas Hansen, Rishabh Jangir, Yu Sun, Guillem Alenya, Pieter Abbeel, Alexei A. Efros, **Lerrel Pinto**, Xiaolong Wang.
ICLR 2021. (**Spotlight Presentation**)

[26] *Task-Agnostic Morphology Evolution.*
Donald J. Hejna III, Pieter Abbeel, **Lerrel Pinto**.
ICLR 2021.

[25] *Automatic Curriculum Learning through Value Disagreement.*
Yunzhi Zhang, Pieter Abbeel, **Lerrel Pinto**.
NeurIPS 2020.

[24] *Reinforcement Learning with Augmented Data.*
Michael Laskin, Kimin Lee, Adam Stooke, **Lerrel Pinto**, Pieter Abbeel, Aravind Srinivas.
NeurIPS 2020. (**Spotlight Presentation**)

[23] *Generalized Hindsight for Reinforcement Learning.*
Alexander C. Li, **Lerrel Pinto**, Pieter Abbeel.
NeurIPS 2020.

[22] *Robust Policies via Mid-Level Visual Representations.*
Bryan Chen, Alexander Sax, Gene Lewis, Iro Armeni, Silvio Savarese, Amir Zamir, Jitendra Malik, **Lerrel Pinto**.
CoRL 2020.

[21] *Learning Predictive Representations for Deformable Objects Using Contrastive Estimation.*
Wilson Yan, Ashwin Vangipuram, Pieter Abbeel, **Lerrel Pinto**.
CoRL 2020.

[20] *Visual Imitation Made Easy.*
Sarah Young, Dhiraj Gandhi, Shubham Tulsiani, Abhinav Gupta, Pieter Abbeel, **Lerrel Pinto**.
CoRL 2020.

[19] *Hierarchically Decoupled Imitation for Morphological Transfer.*
Donald J. Hejna III, Pieter Abbeel, **Lerrel Pinto**.
ICML 2020.

[18] *Swoosh! Rattle! Thump! - Actions that Sound.*
Dhiraj Gandhi, Abhinav Gupta, **Lerrel Pinto**.
RSS 2020.

[17] *Learning to Manipulate Deformable Objects without Demonstrations.*
Yilin Wu, Wilson Yan, Thanard Kurutach, **Lerrel Pinto**, Pieter Abbeel.
RSS 2020.

[15] *Discovering Motor Programs by Recomposing Demonstrations.*
Tanmay Shankar, Shubham Tulsiani, **Lerrel Pinto**, Abhinav Gupta.
ICLR 2020.

[14] *Robot Learning via Human Adversarial Games.*
Jiali Duan*, Qian Wang*, **Lerrel Pinto**, C.-C. Jay Kuo, Stefanos Nikolaidis.
IROS 2019. (**Best Paper on Cognitive Robotics Award Finalist**)

[13] *Environment Probing Interaction Policies.*
WenXuan Zhou, **Lerrel Pinto**, Abhinav Gupta.
ICLR 2019.

[12] *Multiple Interactions Made Easy (MIME): Large Scale Demonstrations Data for Imitation*
Pratyusha Sharma*, Lekha Mohan*, **Lerrel Pinto**, Abhinav Gupta.
CoRL 2018.

[11] *Robot Learning in Homes: Improving Generalization and Reducing Dataset Bias.*
Abhinav Gupta, Adithya Murali, Dhiraj Gandhi, **Lerrel Pinto**.
NeurIPS 2018.

[10] *Asymmetric Actor Critic for Image-Based Robot Learning.*
Lerrel Pinto, Marcin Andrychowicz, Peter Welinder, Wojciech Zaremba, Pieter Abbeel.
RSS 2018.

[9] *CASSL: Curriculum Accelerated Self-Supervised Learning*
Adithyavairavan Murali, **Lerrel Pinto**, Dhiraj Gandhi, Abhinav Gupta.

ICRA 2018.

[8] *Predictive-State Decoders: Encoding the Future into Recurrent Networks.*
Arun Venkatraman, Nicholas Rhinehart, Wen Sun, **Lerrel Pinto**, Martial Hebert, Byron Boots, Kris Kitani, J. Andrew Bagnell.
NIPS 2017.

[7] *Learning to Fly by Crashing.*
Dhiraj Gandhi, **Lerrel Pinto**, Abhinav Gupta.
IROS 2017.

[6] *Robust Adversarial Reinforcement Learning.*
Lerrel Pinto, James Davidson, Rahul Sukthankar, Abhinav Gupta.
ICML 2017.

[5] *Supervision via Competition: Robot Adversaries for Learning Tasks.*
Lerrel Pinto, James Davidson, Abhinav Gupta.
ICRA 2017.

[4] *Learning to Push by Grasping: Using multiple tasks for effective learning.*
Lerrel Pinto, Abhinav Gupta.
ICRA 2017.

[3] *Improved Learing of Dynamics for Control.*
Arun Venkatraman, Roberto Capobianco, **Lerrel Pinto**, Martial Hebert, Daniele Nardi, J. Andrew Bagnell.
ISER 2016.

[2] *The Curious Robot: Learning Visual Representations via Physical Interactions.*
Lerrel Pinto, Dhiraj Gandhi, Yuanfeng Han, Yong-Lae Park, Abhinav Gupta.
ECCV 2016. (**Spotlight Presentation**)

[1] *Supersizing Self-supervision: Learning to grasp from 50K tries and 700 robot hours.*
Lerrel Pinto, Abhinav Gupta.
ICRA 2016. (**Best Student Paper Award**)