Deepak Pathak

Contact Information	Carnegie Mellon University Robotics Institute, School of Computer Science, Pittsburgh, PA	E-mail: dpathak@cs.cmu.edu Website: https://www.cs.cmu.edu/~dpathak/ Google Scholar

Education

University of California, Berkeley — Aug 2014 – Aug 2019
PhD Candidate in Computer Science
Advised by Prof. Alexei A. Efros and Prof. Trevor Darrell (GPA: 4.0/4.0)

Indian Institute of Technology, Kanpur — Aug 2010 – June 2014
BTech. in Computer Science and Engineering
Gold Medal in Computer Science (GPA: 9.9/10)

Appointments

Carnegie Mellon University Pittsburgh, PA — Sept 2020 – Present
Raj Reddy Assistant Professor in Robotics

Facebook AI Research Menlo Park, CA — Sept 2019 – Aug 2020
Researcher with Prof. Jitendra Malik

University of California, Berkeley Berkeley, CA — Sept 2019 – Aug 2020
Visiting PostDoc with Prof. Pieter Abbeel

Industry Experience

Co-Founder and CEO of Skild AI — Founded 2023
Pittsburgh, PA

Co-Founder of VisageMap Inc. — Founded 2014
Later acquired by FaceFirst Inc., Los Angeles, CA

Paper Awards

Best Paper Award at ICRA'24	2024
Best Paper Presentation Award at RSS'24 in Dexterous Manipulation Workshop	2024
Best Oral Paper Award Finalist (top 3) at IEEE-RAS Humanoids'23	2023
Best Paper Award Finalist at WACV'23	2023
Best Paper Award Winner (System) at CoRL'22	2022
Best Paper Award Finalist (System) (top 4) at CoRL'22	2022
Best Paper Award at CVPR'22 in Multimodal Learning Workshop	2022
Best Paper Award Finalist at RSS'22 in Scaling Robot Learning Workshop	2022
Best Cognitive Robotics Paper Award Finalist at ICRA'21	2021
Winner of **Virtual Creatures Competition** at GECCO'19	2019

Honors And Awards

Alfred P. Sloan Research Fellowship	2025
MIT TR 35 under 35 Innovator Award	2024
Awarded **Raj Reddy Chair** in Robotics at CMU	2024
Keynote Speaker at ACCV'24	2024
Okawa Research Award	2022
Young Alumnus Award from IIT Kanpur	2022
Selected as **DARPA Riser**	2022
Keynote Speaker at Conference on Cognitive Computational Neuroscience	2022
Samsung GRO Award	2021-22

Sony Research Award 2020-21

GoodAI Research Award 2020-21

Google Faculty Research Award 2019-20

Facebook Graduate Fellowship 2018-20

Snapchat Research Fellowship 2018

Nvidia Graduate Fellowship 2017-18

ICCV Outstanding Reviewer Award 2017

Gold Medal for the highest academic performance in the department. 2014

Best Undergraduate Thesis Award, IIT Kanpur. 2014

TCS Best Software Award in the graduating year. 2014

Binay Kumar Sinha Award for best industrially applicable thesis in the graduating year. 2014

Academic Excellence Award, IIT Kanpur. 2011-14

CBSE Merit Scholarship for undergraduate studies. 2010-14

Media Coverage

Adaptive Mobile Manipulation In the Open World Spring 2024
New Scientist, *Nature Briefings*, *IOT World Today*, *TechXplore*

Extreme Parkour with Legged Robots Fall 2023
IEEE Spectrum, *CMU News*, *Hacker News*

Affordances from Videos as a Versatile Representation for Robotics Spring 2023
Live CBS TV, *TechCrunch*, *Independent*, *CMU News*

Legged Locomotion in Challenging Terrains using Egocentric Vision Fall 2022
MIT Tech Review, *TechCrunch*, *IEEE Spectrum*, *Cosmos*, *Technology*, *Popular Science*

Deep Whole-Body Control: Unified Policy for Manipulation & Locomotion Fall 2022
New Scientist, *Popular Science*

Human-to-Robot Imitation in the Wild Summer 2022
Vox, *TechCrunch*, *Voice of America*, *ASME*, *TechXplore*, *La Presse*, *01Net French*

Robotic Telekinesis: Learning by Watching Humans on Youtube Spring 2022
TechXplore, *The Voice of America*, *Weights & Biases*, *Two Minute Papers*

RMA: Rapid Motor Adaptation for Legged Robots Summer 2021
Live CBS TV, *Washington Post*, *The Wall Street Journal*, *TechCrunch*, *Forbes*, *CNET*, *TechXplore*, *L'ADN (France)*, *Digitech News (Italy)*, *CNBeta (China)*, *Observador (Portugal)*, *Beratakini (Malaysia)*, *3DNews (Russia)*, *15Min (Lithuania)*, *GeekTime (Israel)*

Auto-Tuned Sim-to-Real Transfer Spring 2021
Synced Review

Planning to Explore via Self-Supervised World Models Fall 2020
VentureBeat, Synced Review

Large-Scale Curiosity-driven Learning Fall 2018
The Economist, The Verge, Quartz, *Two Minute Papers*

Investigating Human Priors for Playing Video Games Spring 2018
MIT Tech Review, Hitech News Daily, *Two Minute Papers*

Curiosity-driven Exploration using Self-Supervised Prediction Summer 2017
The Wall Street Journal, MIT Tech Review, New Scientist, Quanta Magazine, Wired, Engadget, NYPost, California Magazine, Digital Trends, Caixin, Publico, India Times, *Two Minute Papers*

A Comparison of Forecasting Methods: Predicting Oscar Awards Spring 2015
Daily Mail, Business Insider, Engadget, Huffington Post

Service And Leadership

Organizing Committee (Demo Chair): Conference on Robot Learning (CoRL) 2023

Area Chair 2020 - Present
ECCV 2022, NeurIPS 2022/2021/2020, ICLR 2022/2021, CVPR 2021, ICML 2021, ICCV 2021

Session Chair 2020 - Present
NeurIPS 2020/2021, ICRA 2021, ICML 2021

CoRL Workshop Co-organizer Dec 2022
Sim-to-Real Robot Learning: Locomotion and Beyond

CogSci Workshop Co-organizer July 2020
The Origins of Commonsense in Humans and Machines

CVPR Workshop Co-organizer June 2019
Computer Vision After 5 Years

ICLR Workshop Co-organizer May 2019
Task Agnostic Reinforcement Learning

ECCV Workshop Co-organizer Sept 2018
11th POCV Workshop: Action, Perception and Organization

Reviewer 2015-19
CVPR, NeurIPS, ICML, ICLR, CoRL, ECCV, ICCV, AAAI, IJCV, TPAMI, JMLR, RA-L/IROS

Member: CMU RI M.S. Admission Committee 2022

Guest Lecturer: 6th Summer School on Artificial Intelligence, IIIT Hyderabad 2022

Guest Lecturer: CMU AI4ALL Program 2021

Guest Lecturer: AI for Social Good Symposium, Amrita University 2021

Guest Lecturer: Faculty Development Program, Amity University 2021

Member: UC Berkeley Ph.D. Admission Committee 2015, 2018

BAIR Undergraduate Mentor 2018

Invited Talks

"A Bottom-Up Approach to Robot Learning"
ICRA 2024: Learning for Agile Robotics workshop May 2024

"A Full-Stack Approach to Robot Learning"
NeurIPS 2023: Workshop on Robot Learning Dec 2023

"Continually Improving Agents for Generalization in the Wild"
DeepLearn 2023: Summer School on Deep Learning in Gran Canaria, Spain Jul 2023

"Continually Improving Robots: adapting, watching & practicing"
ICVSS 2023: Computer Vision Summer School in Sicily Jul 2023
RSS 2023: Workshop on Environment Generation for Generalizable Robots Jul 2023

"Rethinking the role of data in scaling robotic learning"
RSS 2023: Workshop on Experiment-oriented Robotics Jul 2023

"Rapid Adaptation in Robot Learning"
RSS 2023: Workshop on Rapid and Robust Robotic Active Learning (R3AL) Jul 2023

"What can robots learn from humans?"
CVPR 2023: 3D Scene Understanding for Vision, Graphics and Robotics Workshop Jun 2023
AAAI 2023: Workshop on Representation Learning for Responsible Human-Centered AI Feb 2023

"Learning robot skills in the wild"
Keynote Talk at CSL Student conference in UIUC — Feb 2023

"A Bottom Up Approach to Robot Learning"
NeurIPS 2022: Workshop on Foundation Models in Decision Making — Dec 2022

"Keynote Talk and Fireside Chat"
Conference on Cognitive Computational Neuroscience (CCN) — Aug 2022

"Robotic Generalization In The Wild Through Vision"
Google Brain Vision Reading Group — July 2022

"Open-World Vision for Robot Learning in the Wild"
CVPR 2022: Invited talk at Open World Vision Workshop — June 2022

"Generalizable Policy Learning in the Physical World"
ICLR 2022: Panel Discussion at Workshop — April 2022

"Generalization for Robot Learning In The Wild"
UC Berkeley — Feb 2022
Covariant AI — May 2022
Toyota Research Institute — April 2022
Allen Institute for AI (AI2) — April 2022

"Planning to Explore via World Models"
Dagstuhl Seminar on Recent Advancements in Tractable Probabilistic Inference — April 2022

"Continually Improving Robots: Unsupervised Exploration and Rapid Adaptation"
Speaker, Intrinsically Motivated Open-ended Learning (IMOL) — April 2022

"Learning to Walk via Rapid Motor Adaptation"
Re-Work Deep Learning Summit, San Francisco — Feb 2022

"Robots that Learn to Generalize via Rapid and Continual Adaptation"
Distinguished Talk Series, South Korea — Dec 2021

"Robots that Rapidly Adapt to Diverse Tasks and Environments"
NAVER Labs Seminar Series — Sept 2021
UCL: Centre for Artificial Intelligence — Aug 2021
UBC: CAIDA Seminar Series — July 2021

"Rapid Adaptation in Robot Learning"
CMU: VASC Seminar — Sept 2021
MIT CSAIL: Embodied Intelligence Seminar — July 2021

"Unifying Perception and Control through Video"
CVPR 2021: Invited talk at Unlabeled Video Workshop — June 2021

"Learning to Generalize beyond Training"
Microsoft Research, New York City — Apr 2021

"Robots that Learn to Generalize Beyond Training"
MonREAL/MILA Robot Learning Seminar — Mar 2021

"Ontogeny and Phylogeny of Embodied Robots"
EPFL Neuro Symp: Surprise, Curiosity, Reward — Feb 2021
RTG Computational Cognition: DeepRL Workshop — Jan 2021

"Learning to Generalize beyond Training"
CMU Robotics Institute Seminar — Nov 2020

"Compositional Control: Intelligence without a brain"
GoodAI Workshop on Meta-Learning & Multi-Agent Learning — Aug 2020

"Self-Supervision & Modularity: Cornerstones for Generalization in Embodied Agents"
ECCV 2020: Invited talk at Workshop on Self-Supervised Learning — Aug 2020

"Intelligence without a brain"
CogSci 2020: Invited talk at Workshop on the Origins of Commonsense — July 2020

"Curious and Compositional Robots"
Invited talk at Stanford — July 2020

"What does pretraining mean for robots?"
CVPR 2020: Invited talk at Embodied-AI Workshop — June 2020

"Generalization via Self-Directed Learning"
CMU — Mar 2019
MIT EECS — Mar 2019
MIT BCS — Mar 2019
USC — Feb 2019
Google Brain — May 2019
Nvidia Research — July 2019
Meetup on State of AI and ML by ValleyML.ai — Aug 2019

"Curiosity-driven Exploration in Artificial Agents and Robots"
Workshop on Curiosity, Explanation, & Exploration at Princeton University — June 2019

"Self-Supervised Exploration via Disagreement"
International Conference on Machine Learning (ICML) — June 2019

"Large Scale Study of Curiosity-Driven Learning"
NeurIPS 2018: Deep Reinforcement Learning Workshop — Dec 2018

"Building Generalizable Agents via Curiosity and Self-supervision"
GRASP Seminar: University of Pennsylvania — Sept 2018
Microsoft Research, NYC — Sept 2018
VASC Seminar: Robotics Institute, CMU — May 2018

"Learning Instance Segmentation by Interaction"
Deep Robotics Vision Workshop (CVPR) — June 2018

"Zero-Shot Visual Imitation"
International Conference on Representation Learning (ICLR) — Apr 2018

"Lifelong Learning via Curiosity and Self-supervision"
Vision Seminar: CSAIL, MIT — Mar 2018
Research Meeting: Google Brain — Mar 2018
Invited Talk: Redwood Center for Theoretical Neuroscience, Berkeley — Sept 2017
Invited talk: Uber AI Labs — Sept 2017

"Learning to Perceive and Act via Self-supervision"
Invited talk: Frontiers of Video Technology Workshop, Adobe — July 2017

"Learning Features by Watching Objects Move"
CVPR 2017: Large-Scale Video Understanding Workshop — June 2017

"Curiosity-driven Exploration using Self-Supervised Prediction"
International Conference on Machine Learning (ICML) — May 2017
Invited talk: OpenAI, San Francisco — June 2017

"Exploring Four Axes of Self-Supervision"
Talk at Berkeley AI Research Seminar — Apr 2017

"Unsupervised Learning of Visual Representations"
Mysore Park Workshop on Vision, Language and AI — Dec 2016

Peer Reviewed Publications

Google Scholar (link), 22817 citations, h-index 50, i10-index 80

[1] SPIN: Simultaneous Perception, Interaction and Navigation
Computer Vision and Pattern Recognition (CVPR) 2024
Shagun Uppal, Ananye Agarwal, Haoyu Xiong, Kenneth Shaw, Deepak Pathak

[2] SAPG: Split and Aggregate Policy Gradients
International Conference on Machine Learning (ICML) 2024
Jayesh Singla*, Ananye Agarwal*, Deepak Pathak

[3] Revisiting the Role of Language Priors in Vision-Language Models
International Conference on Machine Learning (ICML) 2024
Zhiqiu Lin*, Xinyue Chen*, Deepak Pathak, Pengchuan Zhang, Deva Ramanan

[4] Evaluating Text-to-Visual Generation with Image-to-Text Generation
European Conference on Computer Vision (ECCV) 2024
Zhiqiu Lin, Deepak Pathak, Baiqi Li, Jiayao Li, Xide Xia, Graham Neubig, Pengchuan Zhang, Deva Ramanan

[5] Extreme Parkour with Legged Robots
International Conference on Robotics and Automation (ICRA) 2024
Xuxin Cheng, Kexin Shi, Ananye Agarwal, Deepak Pathak

[6] Open X-Embodiment: Robotic Learning Datasets and RT-X Models
International Conference on Robotics and Automation (ICRA) 2024
Best Paper Award
Open X-Embodiment Collaboration et. al.

[7] Meta-Evolve: Continuous Robot Evolution for One-to-many Policy Transfer
International Conference on Representation Learning (ICLR) 2024
Xingyu Liu, Deepak Pathak, Ding Zhao

[8] Diffusion-TTA: Test-time Adaptation of Discriminative Models via Generative Feedback
Neural Information Processing Systems (NeurIPS) 2023
Mihir Prabhudesai, Tsung-Wei Ke, Alex Li, Deepak Pathak, Katerina Fragkiadaki

[9] A Framework for Designing Anthropomorphic Soft Hands through Interaction
IEEE-RAS Humanoids Conference 2023 **(Oral)**
Best Paper Award Finalist (top 3)
Pragna Mannam, Kenneth Shaw, Dominik Bauer, Jean Oh, Deepak Pathak, Nancy Pollard

[10] Dexterous Functional Grasping
Conference on Robot Learning (CoRL) 2023
Ananye Agarwal, Shagun Uppal, Kenneth Shaw, Deepak Pathak

[11] Playfusion: Skill acquisition via diffusion from language-annotated play
Conference on Robot Learning (CoRL) 2023
Lili Chen, Shikhar Bahl, Deepak Pathak

[12] DEFT: Dexterous Fine-Tuning for Real-World Hand Policies
Conference on Robot Learning (CoRL) 2023
Aditya Kannan, Kenneth Shaw, Shikhar Bahl, Pragna Mannam, Deepak Pathak

[13] Your diffusion model is secretly a zero-shot classifier
International Conference on Computer Vision (ICCV) 2023
Alexander C. Li, Mihir Prabhudesai, Shivam Duggal, Ellis Brown, Deepak Pathak

[14] Internet explorer: Targeted representation learning on the open web
International Conference on Machine Learning (ICML) 2023
Alexander C. Li, Ellis Langham Brown, Alexei A Efros, Deepak Pathak

[15] Efficient RL via Disentangled Environment and Agent Representations
International Conference on Machine Learning (ICML) 2023 **(Oral)**
Kevin Gmelin, Shikhar Bahl, Russell Mendonca, Deepak Pathak

[16] Test-time adaptation with slot-centric models
International Conference on Machine Learning (ICML) 2023
Mihir Prabhudesai et. al.

[17] LEAP Hand: Low-Cost, Efficient, and Anthropomorphic Hand for Robot Learning
Robotics: Science and Systems (RSS) 2023
Kenneth Shaw, Ananye Agarwal, Deepak Pathak

[18] Structured World Models from Human Vidoes
Robotics: Science and Systems (RSS) 2023
Russell Mendonca*, Shikhar Bahl*, Deepak Pathak

[19] Affordances from Human Videos as a Versatile Representation for Robotics
Computer Vision and Pattern Recognition (CVPR) 2023
Shikhar Bahl*, Russell Mendonca*, Lili Chen, Unnat Jain, Deepak Pathak

[20] Multimodality Helps Unimodality:
Cross-Modal Few-Shot Learning with Multimodal Models
Computer Vision and Pattern Recognition (CVPR) 2023
Zhiqiu Lin, Samuel Yu, Zhiyi Kuang, Deepak Pathak, Deva Ramanan

[21] Legs as Manipulator: Pushing Quadrupedal Agility Beyond Locomotion
International Conference on Robotics and Automation (ICRA) 2023
Xuxin Cheng, Ashish Kumar, Deepak Pathak

[22] ALAN : Autonomously Exploring Robotic Agents in the Real World
International Conference on Robotics and Automation (ICRA) 2023
Russell Mendonca, Shikhar Bahl, Deepak Pathak

[23] FLAVR: Flow-Agnostic Video Representations for Fast Frame Interpolation
Winter Conference on Applications of Computer Vision (WACV) 2023 **(Oral)**
Best Paper Award Finalist
Tarun Kalluri, Deepak Pathak, Manmohan Chandraker, Du Tran

[24] Legged Locomotion in Challenging Terrains using Egocentric Vision
Conference on Robot Learning (CoRL) 2022 **(Oral)**
Best System Paper Award
Ananye Agarwal*, Ashish Kumar*, Jitendra Malik, Deepak Pathak

[25] Deep Whole-Body Control: Learning a Unified Policy for Manipulation and Locomotion
Conference on Robot Learning (CoRL) 2022 **(Oral)**
Best System Paper Award Finalist
Zipeng Fu*, Xuxin Cheng*, Deepak Pathak

[26] VideoDex: Learning Dexterity from Internet Videos
Conference on Robot Learning (CoRL) 2022
Kenneth Shaw*, Shikhar Bahl*, Deepak Pathak

[27] HERD: Continuous Human-to-Robot Evolution for Learning from Human Demonstration
Conference on Robot Learning (CoRL) 2022
Xingyu Liu, Deepak Pathak, Kris M. Kitani

[28] Continual Learning with Evolving Class Ontologies
Neural Information Processing Systems (NeurIPS) 2022
Zhiqiu Lin, Deepak Pathak, Yu-Xiong Wang, Deva Ramanan, Shu Kong

[29] Understanding Collapse in Non-Contrastive Siamese Representation Learning
European Conference on Computer Vision (ECCV) 2022
Alexander Cong Li, Alexei A. Efros, Deepak Pathak

[30] Adapting Rapid Motor Adaptation for Bipedal Robots
International Conference on Intelligent Robots and Systems (IROS) 2022
Ashish Kumar, Zhongyu Li, Jun Zeng, Deepak Pathak, Koushil Sreenath, Jitendra Malik

[31] Human-to-Robot Imitation in the Wild
Robotics: Science and Systems (RSS) 2022
Shikhar Bahl, Abhinav Gupta, Deepak Pathak

[32] Robotic Telekinesis: Learning a Robotic Hand Imitator by Watching Humans on Youtube
Robotics: Science and Systems (RSS) 2022
Best Paper Award Finalist in Scaling Robot Learning Workshop
Aravind Sivakumar, Kenneth Shaw, Deepak Pathak

[33] Topologically-Aware Deformation Fields for Single-View 3D Reconstruction
Computer Vision and Pattern Recognition (CVPR) 2022
Shivam Duggal, Deepak Pathak

[34] Coupling Vision and Proprioception for Navigation of Legged Robots
Computer Vision and Pattern Recognition (CVPR) 2022
Best Paper Award in Multimodal Learning Workshop
Zipeng Fu*, Ashish Kumar*, Ananye Agarwal, Haozhi Qi, Jitendra Malik, Deepak Pathak

[35] Language Models as Zero-Shot Planners: Extracting Actionable Knowledge for Embodied Agents
International Conference on Machine Learning (ICML) 2022
Wenlong Huang, Pieter Abbeel, Deepak Pathak*, Igor Mordatch*

[36] REvolveR: Continuous Evolutionary Models for Robot-to-Robot Policy Transfer
International Conference on Machine Learning (ICML) 2022 **(Long Oral)**
Xingyu Liu, Deepak Pathak, Kris M. Kitani

[37] Zero-Shot Reward Specification via Grounded Natural Language
International Conference on Machine Learning (ICML) 2022
Parsa Mahmoudieh, Deepak Pathak, Trevor Darrell

[38] Discovering and Achieving Goals via World Models
Neural Information Processing Systems (NeurIPS) 2021
Russell Mendonca*, Oleh Rybkin*, Kostas Daniilidis, Danijar Hafner, Deepak Pathak

[39] Functional Regularization for Reinforcement Learning via Learned Fourier Features
Neural Information Processing Systems (NeurIPS) 2021
Alexander C. Li, Deepak Pathak

[40] Interesting Object, Curious Agent: Learning Task-Agnostic Exploration
Neural Information Processing Systems (NeurIPS) 2021 **(Oral)**
Simone Parisi, Victoria Dean, Deepak Pathak, Abhinav Gupta

[41] Accelerating Robotic Reinforcement Learning via Parameterized Action Primitives
Neural Information Processing Systems (NeurIPS) 2021
Murtaza Dalal, Deepak Pathak*, Ruslan Salakhutdinov*

[42] The CLEAR Benchmark: Continual LEArning on Real-World Imagery
Neural Information Processing Systems Datasets and Benchmark Track (NeurIPS) 2021
Zhiqiu Lin, Jia Shi, Deepak Pathak, Deva Ramanan

[43] RB2: Robotic Manipulation Benchmarking with a Twist
Neural Information Processing Systems Datasets and Benchmark Track (NeurIPS) 2021
Sudeep Dasari, et.al.

[44] Minimizing Energy Consumption Leads to the Emergence of Gaits in Legged Robots
Conference on Robot Learning (CoRL) 2021
Zipeng Fu, Ashish Kumar, Jitendra Malik, Deepak Pathak

[45] Worldsheet: Wrapping the World in a 3D Sheet for View Synthesis from a Single Image
International Conference on Computer Vision (ICCV) 2021 **(Oral)**
Ronghang Hu, Nikhila Ravi, Alex Berg, Deepak Pathak

[46] Hierarchical Neural Dynamic Policies
Robotics: Science and Systems (RSS) 2021
Shikhar Bahl, Abhinav Gupta, Deepak Pathak

[47] RMA: Rapid Motor Adaptation for Legged Robots
Robotics: Science and Systems (RSS) 2021
Ashish Kumar, Zipeng Fu, Deepak Pathak, Jitendra Malik

[48] Unsupervised Learning of Visual 3D Keypoints for Control
International Conference on Machine Learning (ICML) 2021
Boyuan Chen, Pieter Abbeel, Deepak Pathak

[49] Differentiable Spatial Planning using Transformers
International Conference on Machine Learning (ICML) 2021
Devendra Chaplot, Deepak Pathak, Jitendra Malik

[50] Auto-Tuned Sim-to-Real Transfer
International Conference on Robotics and Automation (ICRA) 2021
Best Cognitive Robotics Paper Award Finalist
Yuqing Du, Olivia Watkins, Trevor Darrell, Pieter Abbeel, Deepak Pathak

[51] Planning in Learned Latent Action Spaces for Generalizable Legged Locomotion
IEEE Robotics and Automation Letters (RA-L) 2021
Tianyu Li, Roberto Calandra, Deepak Pathak, Yuandong Tian, Franziska Meier, Akshara Rai

[52] Learning Long-term Visual Dynamics with Region Proposal Interaction Networks
International Conference on Representation Learning (ICLR) 2021
Haozhi Qi, Xiaolong Wang, Deepak Pathak, Yi Ma, Jitendra Malik

[53] Neural Dynamic Policies for End-to-End Sensorimotor Learning
Neural Information Processing Systems (NeurIPS) 2020 **(Spotlight)**
Shikhar Bahl, Mustafa Mukadam, Abhinav Gupta, Deepak Pathak

[54] Sparse Graphical Memory for Robust Planning
Neural Information Processing Systems (NeurIPS) 2020
Michael Laskin, Scott Emmons, Ajay Jain, Thanard Kurutach, Pieter Abbeel, Deepak Pathak

[55] One Policy to Control Them All:
Shared Modular Policies for Agent-Agnostic Control
International Conference on Machine Learning (ICML) 2020
Wenlong Huang, Igor Mordatch, Deepak Pathak

[56] Planning to Explore via Self-Supervised World Models
International Conference on Machine Learning (ICML) 2020
Ramanan Sekar, Oleh Rybkin, Kostas Daniilidis, Pieter Abbeel, Danijar Hafner, Deepak Pathak

[57] Locally Masked Convolution for Autoregressive Models
Uncertainty in Artificial Intelligence (UAI) 2020
Ajay Jain, Pieter Abbeel, Deepak Pathak

[58] Compositional GAN: Learning Conditional Image Composition
International Journal of Computer Vision (IJCV) 2020
Samaneh Azadi, Deepak Pathak, Sayna Ebrahimi, Trevor Darrell

[59] Learning to Control Self-assembling Morphologies: A Study of
Generalization via Modularity
Neural Information Processing Systems (NeurIPS) 2019 **(Spotlight)**
Deepak Pathak*, Chris Lu*, Trevor Darrell, Phillip Isola, Alexei A. Efros
Winner of Virtual Creatures Competition 2019

[60] Third-Person Visual Imitation Learning via Decoupled Hierarchical Control
Neural Information Processing Systems (NeurIPS) 2019
Pratyusha Sharma, Deepak Pathak, Abhinav Gupta

[61] Self-Supervised Exploration via Disagreement
International Conference on Machine Learning (ICML) 2019
Deepak Pathak*, Dhiraj Gandhi*, Abhinav Gupta

[62] Large-Scale Study of Curiosity-Driven Learning
International Conference on Representation Learning (ICLR) 2019
Yuri Burda*, Harri Edwards*, Deepak Pathak*, Amos Storkey, Trevor Darrell, Alexei A. Efros
Also at Deep RL Workshop, NeurIPS 2018 **(Oral)**

[63] Zero-Shot Visual Imitation
International Conference on Representation Learning (ICLR) 2018 **(Oral)**
Deepak Pathak*, Parsa Mahmoudieh*, Guanghao Luo*, Pulkit Agrawal*, Dian Chen, Fred Shentu, Evan Shelhamer, Jitendra Malik, Alexei A. Efros, Trevor Darrell

[64] Investigating Human Priors for Playing Video Games
International Conference on Machine Learning (ICML) 2018 **(Long Oral)**
Rachit Dubey, Pulkit Agarwal, Deepak Pathak, Thomas L. Griffiths, Alexei A. Efros

[65] Learning Instance Segmentation by Interaction
Deep Learning in Robotics Vision Workshop (CVPR) 2018 **(Oral)**
Deepak Pathak*, Yide Shentu*, Dian Chen*, Pulkit Agrawal*, Trevor Darrell, Sergey Levine, Jitendra Malik

[66] Curiosity-driven Exploration using Self-Supervised Prediction
International Conference on Machine Learning (ICML) 2017
Deepak Pathak, Pulkit Agrawal, Alexei A. Efros, Trevor Darrell

[67] Learning Features by Watching Objects Move
Computer Vision and Pattern Recognition (CVPR) 2017
Deepak Pathak, Ross Girshick, Piotr Dollár, Trevor Darrell, Bharath Hariharan
Also at Large-Scale Video Understanding Workshop (CVPR) 2017 **(Oral)**

[68] Toward Multimodal Image-to-Image Translation
Neural Information Processing Systems (NIPS) 2017
Jun-Yan Zhu, Richard Zhang, Deepak Pathak, T. Darrell, A. A. Efros, O. Wang, Eli Shechtman

[69] Context Encoders: Feature Learning by Inpainting
Computer Vision and Pattern Recognition (CVPR) 2016
Deepak Pathak, Philipp Krähenbühl, Jeff Donahue, Trevor Darrell, Alexei A. Efros

[70] Large Scale Visual Recognition through Adaptation using Joint Representation and Multiple Instance Learning
Journal of Machine Learning Research (JMLR) 2016
Judy Hoffman, Deepak Pathak, Eric Tzeng, J. Long, S. Guadarrama, T. Darrell, Kate Saenko

[71] Constrained Convolutional Neural Networks for Weakly Supervised Segmentation
International Conference on Computer Vision (ICCV) 2015
Deepak Pathak, Philipp Krähenbühl, Trevor Darrell

[72] Fully Convolutional Multi-Class Multiple Instance Learning
Workshop Track in International Conference on Representation Learning (ICLR) 2015
Deepak Pathak, Evan Shelhamer, Jonathon Long, Trevor Darrell

[73] Detector Discovery in the Wild: Joint Multiple Instance and Representation Learning
Computer Vision and Pattern Recognition (CVPR) 2015
Judy Hoffman, Deepak Pathak, Trevor Darrell, Kate Saenko

[74] A Comparison of Forecasting Methods: fundamentals, polling, prediction markets, and experts
Journal of Prediction Markets (JPM) 2015
Deepak Pathak, David Rothschild, Miro Dudík

[75] Anomaly Localization in Topic-based Analysis of Surveillance Videos
Winter Conference on Applications of Computer Vision (WACV) 2015
Deepak Pathak, Abhijit Sharang, Amitabha Mukerjee

[76] Where is my Friend? - Person identification in Social Networks
Automatic Face and Gesture Recognition (FG) 2015
Deepak Pathak, Sai Nitish Satyavolu, Vinay P. Namboodiri

Other Publications

[77] Generalization in Dexterous Manipulation via Geometry-Aware Multi-Task Learning
arXiv 2021
Wenlong Huang, Igor Mordatch, Pieter Abbeel, Deepak Pathak

[78] Constrained Structured Regression with Convolutional Neural Networks
arXiv 2015
Deepak Pathak, Philipp Krähenbühl, Stella X. Yu, Trevor Darrell

Teaching Experience

Instructor, 16-824: Visual Learning and Recognition Spring 2021-2023
Carnegie Mellon University

Instructor, 16-884: Deep Learning for Robotics Fall 2021-2022
Carnegie Mellon University

CS 280: Computer Vision Spring 2016
University of California, Berkeley
Graduate Student Instructor with Prof. Alexei A. Efros and Prof. Trevor Darrell

CS 189/289: Introduction to Machine Learning Fall 2015
University of California, Berkeley
Graduate Student Instructor with Prof. Alexei A. Efros and Dr. Isabelle Guyon

Guest Lectures: Berkeley Learn2Launch Series at UC Berkeley Spring 2019