

Homer Walke

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EDUCATION

University of California - Berkeley

PhD in Computer Science

- Advisor: Professor Sergey Levine

Berkeley, CA

Anticipated Graduation May 2026

Brown University

BS in Computer Science with Honors

- Advisors: Professor Michael Littman, Professor Daniel Ritchie

Providence, RI

May 2021

RESEARCH INTERESTS

- Generative modeling for control: vision-language-action models, world modeling.
- Generative modeling of video: diffusion, flow matching, architectures.

RESEARCH EXPERIENCE

Graduate Student Researcher

UC Berkeley, Robotic AI and Learning Lab, Professor Sergey Levine

September 2021 – Present

Intern at Physical Intelligence

Physical Intelligence (physicalintelligence.company)

Jan 2025 – Aug 2025

Undergraduate Researcher

Brown University, Visual Computing Group, Professor Daniel Ritchie

June 2020 – May 2021

Undergraduate Researcher

Brown University, Robotics Group, Professor Michael Littman

June 2019 – May 2021

SELECTED PUBLICATIONS

Scaling Cross-Embodied Learning: One Policy for Manipulation, Navigation, Locomotion and Aviation

Ria Doshi*, Homer Walke*, Oier Mees, Sudeep Dasari, Sergey Levine.

CoRL 2024 Oral | [arXiv:2408.11812](https://arxiv.org/abs/2408.11812).

Octo: An Open-Source Generalist Robot Policy

Dibya Ghosh*, Homer Walke*, Karl Pertsch*, Kevin Black*, Oier Mees*, Sudeep Dasari, Joey Hejna, Charles Xu, Jianlan Luo, Tobias Kreiman, You Liang Tan, Dorsa Sadigh, Chelsea Finn, Sergey Levine.

RSS 2024 | [arXiv:2405.12213](https://arxiv.org/abs/2405.12213).

BridgeData V2: A Dataset for Robot Learning at Scale

Homer Walke, Kevin Black, Abraham Lee, Moo Jin Kim, Max Du, Chongyi Zheng, Tony Zhao, Philippe Hansen-Estruch, Quan Vuong, Andre He, Vivek Myers, Kuan Fang, Chelsea Finn, Sergey Levine.

CoRL 2023 | [arXiv:2308.12952](https://arxiv.org/abs/2308.12952).

OTHER PUBLICATIONS

Knowledge Insulating Vision-Language-Action Models: Train Fast, Run Fast, Generalize Better

Danny Driess, Jost Tobias Springenberg, Brian Ichter, Lili Yu, Adrian Li-Bell, Karl Pertsch, Allen Z. Ren, Homer Walke, Quan Vuong, Lucy Xiaoyang Shi, Sergey Levine

NeurIPS 2025 | [arXiv:2505.23705](https://arxiv.org/abs/2505.23705).

$\pi_{0.5}$: a Vision-Language-Action Model with Open-World Generalization

Physical Intelligence Team

CoRL 2025 | [arXiv:2504.16054](https://arxiv.org/abs/2504.16054).

Autonomous Improvement of Instruction Following Skills via Foundation Models

Zhiyuan Zhou, Pranav Atreya, Abraham Lee, Homer Walke, Oier Mees, Sergey Levine.

CoRL 2024 | [arXiv:2407.20635](#).

DROID: A Large-Scale In-The-Wild Robot Manipulation Dataset

Alexander Khazatsky, Karl Pertsch, et al.

RSS 2024 | [arXiv:2403.12945](#).

Evaluating Real-World Robot Manipulation Policies in Simulation

Xuanlin Li, Kyle Hsu, Jiayuan Gu, Karl Pertsch, Oier Mees, Homer Walke, Chuyuan Fu, Ishikaa Lunawat, Isabel Sieh, Sean Kirmani, Sergey Levine, Jiajun Wu, Chelsea Finn, Hao Su, Quan Vuong, Ted Xiao.

CoRL 2024 | [arXiv:2405.05941](#).

Zero-Shot Robotic Manipulation with Pretrained Image-Editing Diffusion Models

Kevin Black*, Mitsuhiro Nakamoto*, Pranav Atreya, Homer Walke, Chelsea Finn, Aviral Kumar, Sergey Levine.

ICLR 2024 | [arXiv:2310.10639](#).

Open X-Embodiment: Robotic Learning Datasets and RT-X Models

Open X-Embodiment Collaboration

ICRA 2024 | [arXiv:2310.08864](#).

Goal Representations for Instruction Following: A Semi-Supervised Language Interface to Control

Vivek Myers*, Andre He*, Kuan Fang, Homer Walke, Phillippe Hansen-Estruch, Ching-An Cheng, Mihai Jalobeanu, Andrey Kolobov, Anca Dragan, Sergey Levine.

CoRL 2023 | [arXiv:2307.00117](#).

Stabilizing Contrastive RL: Techniques for Offline Goal Reaching

Chongyi Zheng, Benjamin Eysenbach, Homer Walke, Patrick Yin, Kuan Fang, Ruslan Salakhutdinov, Sergey Levine.

ICLR 2024 Spotlight | [arXiv:2306.03346](#).

Generalization with Lossy Affordances: Leveraging Broad Offline Data for Learning Visuomotor Tasks

Kuan Fang, Patrick Yin, Ashvin Nair, Homer Walke, Gengchen Yan, Sergey Levine.

CoRL 2022 Oral | [arXiv:2210.06601](#).

Don't Start From Scratch: Leveraging Prior Data to Automate Robotic Reinforcement Learning

Homer Walke, Jonathan Yang, Albert Yu, Aviral Kumar, Jędrzej Orbik, Avi Singh, Sergey Levine.

CoRL 2022 | [arXiv:2207.04703](#).

PLAD: Learning to Infer Shape Programs with Pseudo-Labels and Approximate Distributions

R. Kenny Jones, Homer Walke, Daniel Ritchie.

CVPR 2022 | [arXiv:2011.13045](#).

NeuralLTLf: Learning Linear Temporal Logic Specifications with a Specialized Neural Operator

Homer Walke, Daniel Ritter, Carl Trimbach, Michael Littman.

2021 | [arXiv:2111.04147](#).

Learning Finite Linear Temporal Logic Formulas

Homer Walke.

2021 | [Undergraduate Honors Thesis](#)

HONORS

CRA Outstanding Undergraduate Researcher Honorable Mention (2021)

TEACHING EXPERIENCE

Graduate Student Instructor

August – December 2022

UC Berkeley

- Teaching assistant for CS285 Deep Reinforcement Learning at UC Berkeley.

Undergraduate Teaching Assistant

September – December 2018

Brown University

- Teaching assistant for CSCI 0170, one of Brown's introductory computer science courses.

TECHNICAL SKILLS

Languages: Python, Java, C

Libraries: Jax, Tensorflow, PyTorch, NumPy