



Chelsea Finn

Assistant Professor of Computer Science and of Electrical Engineering

Bio

BIO

Chelsea Finn is an Assistant Professor in Computer Science and Electrical Engineering at Stanford University, and the William George and Ida Mary Hoover Faculty Fellow. Professor Finn's research interests lie in the ability to enable robots and other agents to develop broadly intelligent behavior through learning and interaction. Her work lies at the intersection of machine learning and robotic control, including topics such as end-to-end learning of visual perception and robotic manipulation skills, deep reinforcement learning of general skills from autonomously collected experience, and meta-learning algorithms that can enable fast learning of new concepts and behaviors. Professor Finn received her Bachelors degree in Electrical Engineering and Computer Science at MIT and her PhD in Computer Science at UC Berkeley. Her research has been recognized through the ACM doctoral dissertation award, an NSF graduate fellowship, a Facebook fellowship, the C.V. Ramamoorthy Distinguished Research Award, and the MIT Technology Review 35 under 35 Award, and her work has been covered by various media outlets, including the New York Times, Wired, and Bloomberg. Throughout her career, she has sought to increase the representation of underrepresented minorities within CS and AI by developing an AI outreach camp at Berkeley for underprivileged high school students, a mentoring program for underrepresented undergraduates across three universities, and leading efforts within the WiML and Berkeley WiCSE communities of women researchers.

Website: <https://ai.stanford.edu/~cbfinn>

ACADEMIC APPOINTMENTS

- Assistant Professor, Computer Science
- Assistant Professor, Electrical Engineering
- Faculty Affiliate, Institute for Human-Centered Artificial Intelligence (HAI)
- Member, Wu Tsai Human Performance Alliance

HONORS AND AWARDS

- Early Academic Career Award in Robotics and Automation, IEEE RAS (2022)
- Young Investigator Award, Office of Naval Research (2021)
- Microsoft Faculty Fellowship, Microsoft (2020)
- ACM Doctoral Dissertation Award, ACM (2019)
- 35 Under 35 Innovator, MIT Technology Review (2018)
- C.V. Ramamoorthy Distinguished Research Award, UC Berkeley (2017)

PROGRAM AFFILIATIONS

- Symbolic Systems Program

LINKS

- Academic website: <http://ai.stanford.edu/~cbfynn/>
- Google Scholar: <https://scholar.google.com/citations?user=vfPE6hgAAAAJ>
- CV: http://ai.stanford.edu/~cbfynn/_files/cv.pdf

Teaching

COURSES

2022-23

- Deep Multi-task and Meta Learning: CS 330 (Aut)

2021-22

- Deep Multi-task and Meta Learning: CS 330 (Aut)

2020-21

- Artificial Intelligence: Principles and Techniques: CS 221 (Spr)
- Deep Multi-task and Meta Learning: CS 330 (Aut)

2019-20

- Artificial Intelligence: Principles and Techniques: CS 221 (Spr)
- Deep Multi-task and Meta Learning: CS 330 (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Effie Li, Michael Lingelbach, Andrew Nam

Postdoctoral Faculty Sponsor

Ali Ghadirzadeh, Huaxiu Yao

Doctoral Dissertation Advisor (AC)

Suraj Nair

Master's Program Advisor

Michal Adamkiewicz, Samir Agarwala, Alaskar Alizada, Lilian Chan, Aditya Chandrasekar, Peng Chen, Ben Cheng, Leo Dong, Vanessa Felix, Chih-Ying Liu, Brennan Megregian, Oscar O'Rahilly, Jinang Shah, Anirudh Sriram, Xuan Su, Yian Zhang, suzy lou

Doctoral Dissertation Co-Advisor (AC)

Dilip Arumugam, Saurabh Kumar, Eric Mitchell

Doctoral (Program)

Kaylee Burns, Annie Chen, Kyle Hsu, Sasha Khazatsky, Yoonho Lee, Evan Liu, Ariana Mann, Suraj Nair, Archit Sharma, Siyi Tang, Annie Xie, Zihao Zhao, Allan Zhou

Publications

PUBLICATIONS

- **Play it by Ear: Learning Skills amidst Occlusion through Audio-Visual Imitation Learning**
Du, M., Lee, O. Y., Nair, S., Finn, C., Hauser, K., Shell, D., Huang, S.

RSS FOUNDATION-ROBOTICS SCIENCE & SYSTEMS FOUNDATION.2022

- **Bridge Data: Boosting Generalization of Robotic Skills with Cross-Domain Datasets**
Ebert, F., Yang, Y., Schmeckpeper, K., Bucher, B., Georgakis, G., Daniilidis, K., Finn, C., Levine, S., Hauser, K., Shell, D., Huang, S.
RSS FOUNDATION-ROBOTICS SCIENCE & SYSTEMS FOUNDATION.2022
- **Batch Exploration With Examples for Scalable Robotic Reinforcement Learning** *IEEE ROBOTICS AND AUTOMATION LETTERS*
Chen, A. S., Nam, H., Nair, S., Finn, C.
2021; 6 (3): 4401–8
- **Recovery RL: Safe Reinforcement Learning With Learned Recovery Zones** *IEEE ROBOTICS AND AUTOMATION LETTERS*
Thananjeyan, B., Balakrishna, A., Nair, S., Luo, M., Srinivasan, K., Hwang, M., Gonzalez, J. E., Ibarz, J., Finn, C., Goldberg, K.
2021; 6 (3): 4915-4922
- **How to train your robot with deep reinforcement learning: lessons we have learned** *INTERNATIONAL JOURNAL OF ROBOTICS RESEARCH*
Ibarz, J., Tan, J., Finn, C., Kalakrishnan, M., Pastor, P., Levine, S.
2021; 40 (4-5): 698-721
- **WILDS: A Benchmark of in-the-Wild Distribution Shifts**
Koh, P., Sagawa, S., Marklund, H., Xie, S., Zhang, M., Balsubramani, A., Hu, W., Yasunaga, M., Phillips, R., Gao, I., Lee, T., David, E., Stavness, et al
JMLR-JOURNAL MACHINE LEARNING RESEARCH.2021
- **Bayesian Meta-Learning for Few-Shot Policy Adaptation Across Robotic Platforms**
Ghadirzadeh, A., Chen, X., Poklukar, P., Finn, C., Bjorkman, M., Kragic, D., IEEE
IEEE.2021: 1274-1280
- **Offline Meta-Reinforcement Learning with Advantage Weighting**
Mitchell, E., Rafailov, R., Peng, X., Levine, S., Finn, C., Meila, M., Zhang, T.
JMLR-JOURNAL MACHINE LEARNING RESEARCH.2021
- **Deep Reinforcement Learning amidst Continual Structured Non-Stationarity**
Xie, A., Harrison, J., Finn, C., Meila, M., Zhang, T.
JMLR-JOURNAL MACHINE LEARNING RESEARCH.2021
- **Learning Generalizable Robotic Reward Functions from "In-The-Wild" Human Videos**
Chen, A. S., Nair, S., Finn, C., Shell, D. A., Toussaint, M., Hsieh, M. A.
RSS FOUNDATION-ROBOTICS SCIENCE & SYSTEMS FOUNDATION.2021
- **Decoupling Exploration and Exploitation for Meta-Reinforcement Learning without Sacrifices**
Liu, E., Raghunathan, A., Liang, P., Finn, C., Meila, M., Zhang, T.
JMLR-JOURNAL MACHINE LEARNING RESEARCH.2021
- **Just Train Twice: Improving Group Robustness without Training Group Information**
Liu, E., Haghgoo, B., Chen, A. S., Raghunathan, A., Koh, P., Sagawa, S., Liang, P., Finn, C., Meila, M., Zhang, T.
JMLR-JOURNAL MACHINE LEARNING RESEARCH.2021
- **Catformer: Designing Stable Transformers via Sensitivity Analysis**
Davis, J., Gu, A., Choromanski, K., Dao, T., Re, C., Finn, C., Liang, P., Meila, M., Zhang, T.
JMLR-JOURNAL MACHINE LEARNING RESEARCH.2021
- **Actionable Models: Unsupervised Offline Reinforcement Learning of Robotic Skills**
Chebotar, Y., Hausman, K., Lu, Y., Xiao, T., Kalashnikov, D., Varley, J., Irpan, A., Eysenbach, B., Julian, R., Finn, C., Levine, S., Meila, M., Zhang, et al
JMLR-JOURNAL MACHINE LEARNING RESEARCH.2021
- **Greedy Hierarchical Variational Autoencoders for Large-Scale Video Prediction**
Wu, B., Nair, S., Martin-Martin, R., Li Fei-Fei, Finn, C., IEEE COMP SOC
IEEE COMPUTER SOC.2021: 2318-2328
- **Scalable Multi-Task Imitation Learning with Autonomous Improvement**
Singh, A., Jang, E., Irpan, A., Kappler, D., Dalal, M., Levine, S., Khansari, M., Finn, C., IEEE

IEEE.2020: 2167-2173

- **OmniTact: A Multi-Directional High-Resolution Touch Sensor**

Padmanabha, A., Ebert, F., Tian, S., Calandra, R., Finn, C., Levine, S., IEEE

IEEE.2020: 618-624

- **Meta-Inverse Reinforcement Learning with Probabilistic Context Variables**

Yu, L., Yu, T., Finn, C., Ermon, S., Wallach, H., Larochelle, H., Beygelzimer, A., d'Alche-Buc, F., Fox, E., Garnett, R.

NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2019

- **Unsupervised Curricula for Visual Meta-Reinforcement Learning**

Jabri, A., Hsu, K., Eysenbach, B., Gupta, A., Levine, S., Finn, C., Wallach, H., Larochelle, H., Beygelzimer, A., d'Alche-Buc, F., Fox, E., Garnett, R.

NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2019

- **Unsupervised Visuomotor Control through Distributional Planning Networks**

Yu, T., Shevchuk, G., Sadigh, D., Finn, C., Bicchi, A., KressGazit, H., Hutchinson, S.

MIT PRESS.2019

- **One-Shot Composition of Vision-Based Skills from Demonstration**

Yu, T., Abbeel, P., Levine, S., Finn, C., IEEE

IEEE.2019: 2643-50