

Chelsea B. Finn

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Education

University of California, Berkeley, Berkeley CA 2014 – present
PhD, Department of Electrical Engineering and Computer Science
Advisers: Pieter Abbeel, Sergey Levine

Massachusetts Institute of Technology, Cambridge MA 2010 – 2014
Bachelor of Science, Electrical Engineering and Computer Science *GPA: 4.97/5.0*

Research and Industry Experience

Berkeley Artificial Intelligence Research (BAIR) Research Assistant 2014 – present
Research in machine learning for robotic perception and control

Google, Inc., Brain Team, Research Intern 2016
Research on large-scale, self-supervised robotic learning

Counsyl, Inc., Automation Engineering Intern 2014
Computational biology and robotics for automated genomics

MIT Robotics, Vision, and Sensor Networks Group, with Seth Teller 2013 – 2014
Research in computer vision and robotics for assistive technology

Google, Inc., Software Engineering Intern 2013
Video processing research and development for YouTube and Google Play Movies

MIT Earth Signals and Systems Group, with Sai Ravela 2012 – 2013
Computer vision research for animal biometrics and conservation

Google, Inc., Engineering Practicum Intern 2012
Software development for the Google Translator Toolkit

MIT Media Lab Human Dynamics Group, with Yves-Alexandre de Montjoye 2011
Research in node arrival processes in networks of people

Sandia National Labs, Intern 2010
Research and development in computational biology

Teaching Experience

Guest Lecturer, Stanford CS234: Reinforcement Learning Spring 2017
Lecture on soft optimality and inverse reinforcement learning

Guest Lecturer, Berkeley CS 280: Computer Vision Spring 2017
Lecture on vision for robotic manipulation

Co-Instructor, Berkeley CS 294-112: Deep Reinforcement Learning Spring 2017
Create and give lectures, design new course assignments

Guest Lecturer, Berkeley CS 280: Computer Vision Spring 2016
Lecture on visuomotor learning methods

Guest Lecturer, Berkeley CS 294: Deep Reinforcement Learning Fall 2015
Lecture on guided policy search

Teaching Assistant, Berkeley CS 188: Introduction to Artificial Intelligence Spring 2015
Teach weekly problem solving sections covering AI topics, head exam composer

Guest Lecturer, Berkeley CS 188: Introduction to Artificial Intelligence Spring 2015
Lectures on Hidden Markov Models (HMMs), particle filtering, and perceptrons

Teaching Assistant, MIT 6.008: Introduction to Inference Spring 2014
Teach recitation sections on inference algorithms and graphical models

Course Lab Assistant, MIT 6.141: Robotics: Science and Systems I Spring 2013
Prepared lab assignments, answered questions, and evaluated students

Course Lab Assistant, MIT 6.02: Digital Communication Systems Spring 2012
Answered questions and helped students debug solutions

Journal and Conference Publications

Chelsea Finn, Pieter Abbeel, Sergey Levine. **Model-Agnostic Meta-Learning for Fast Adaptation of Deep Networks**. *International Conference on Machine Learning (ICML)*. 2017.

Chelsea Finn, Tianhe Yu, Justin Fu, Pieter Abbeel, Sergey Levine. **Generalizing Skills with Semi-Supervised Reinforcement Learning**. *International Conference on Learning Representations (ICLR)*. 2017.

Chelsea Finn, Sergey Levine. **Deep Visual Foresight for Planning Robot Motion**. *International Conference on Robotics and Automation (ICRA)*. 2017.

William Montgomery*, Anurag Ajay*, Chelsea Finn, Pieter Abbeel, Sergey Levine. **Reset-Free Guided Policy Search: Efficient Deep Reinforcement Learning with Stochastic Initial States**. *International Conference on Robotics and Automation (ICRA)*. 2017.

Chelsea Finn, Ian Goodfellow, Sergey Levine. **Unsupervised Learning for Physical Interaction through Video Prediction**. *Neural Information Processing Systems (NIPS)*. 2016.

Eric Tzeng, Coline Devin, Judy Hoffman, Chelsea Finn, Pieter Abbeel, Sergey Levine, Kate Saenko and Trevor Darrell. **Adapting Deep Visuomotor Representations with Weak Pairwise Constraints**. *Workshop on the Algorithmic Foundations of Robotics (WAFR)*. 2016.

Chelsea Finn, Sergey Levine, Pieter Abbeel. **Guided Cost Learning: Deep Inverse Optimal Control via Policy Optimization**. *International Conference on Machine Learning (ICML)*. 2016.

Chelsea Finn, Xin Yu Tan, Yan Duan, Trevor Darrell, Sergey Levine, Pieter Abbeel. **Deep Spatial Autoencoders for Visuomotor Learning**. *International Conference on Robotics and Automation (ICRA)*. 2016.

Marvin Zhang, Zoe McCarthy, Chelsea Finn, Sergey Levine, Pieter Abbeel. **Learning Deep**

Neural Network Policies with Continuous Memory States. *International Conference on Robotics and Automation (ICRA)*. 2016.

Sergey Levine*, Chelsea Finn*, Trevor Darrell, Pieter Abbeel. **End-to-End Training of Deep Visuomotor Policies.** *Journal of Machine Learning (JMLR)*. 2016.

Hsueh-Cheng Wang, Chelsea Finn, Liam Paull, Michael Kaess, Ruth Rosenholtz, Seth Teller, John Leonard. **Bridging text spotting and SLAM with junction features.** *International Conference on Intelligent Robots and Systems (IROS)*. 2015.

Dylan Hadfield-Menell, Alex Xavier Lee, Chelsea Finn, Eric Tzeng, Sandy Huang, Pieter Abbeel. **Beyond Lowest-Warping Cost Action Selection in Trajectory Transfer.** *International Conference on Robotics and Automation (ICRA)*. 2015.

James Duyck, Chelsea Finn, Andy Hutcheon, Pablo Vera, Joaquin Salas, Sai Ravela. **Sloop: A pattern retrieval engine for individual animal identification.** *Pattern Recognition*. 2014.

Chelsea Finn, James Duyck, Andy Hutcheon, Pablo Vera, Joaquin Salas, Sai Ravela. **Relevance feedback in biometric retrieval of animal photographs.** *Mexican Conference on Pattern Recognition (MCP)*. 2014.

Sai Ravela, James Duyck, Chelsea Finn. **Vision-Based Biometrics for Conservation.** *Mexican Conference on Pattern Recognition (MCP)*. 2013.

Workshop Papers and Abstracts

Chelsea Finn*, Paul Christiano*, Pieter Abbeel, Sergey Levine. **A Connection between Generative Adversarial Networks, Inverse Reinforcement Learning, and Energy-based Models.** *NIPS Workshop on Adversarial Training*. 2016.

Mark Woodward, Chelsea Finn. **Active One-Shot Learning.** *NIPS Deep Reinforcement Learning Workshop*. 2016.

Chelsea Finn, Lisa Anne Hendricks, Trevor Darrell **Learning Compact Convolutional Neural Networks with Nested Dropout.** *International Conference on Learning Representations (ICLR) – Workshop Contribution*. 2015.

Mentoring

Undergraduate research:

Nopphon Sirinart (currently PhD student at Stanford)

Justin Fu (currently PhD student at Berkeley)

Marvin Zhang (currently PhD student at Berkeley)

Anurag Ajay (incoming PhD student at MIT)

Emily Scharff

Xin Yu Tan

Tianhe Yu

Masters research:

Frederik Ebert (incoming PhD student at Berkeley)

Honors and Awards

ICRA Best Cognitive Robotics Paper Finalist	2017
C.V. Ramamoorthy Distinguished Research Award	2017
Tong Leong Lim Pre-Doctoral Prize	2016
Neural Information Processing Systems (NIPS) Foundation Travel Award	2016
National Science Foundation Graduate Research Fellowship	2015-present
Robotics: Science & Systems (RSS) Women in Robotics Travel Award	2015
National Defense Science and Engineering Graduate Fellowship (<i>declined</i>)	2015
IEEE-HKN Alton B. Zerby and Carl T. Koerner Outstanding Student Award	2015
SanDisk Fellowship	2015
UC Berkeley EECS Department Fellowship	2014
MIT SuperUROP Outstanding Presentation Award	2014

Professional Activities

Paper Reviewing:

International Conference on Machine Learning (ICML) 2017
 International Conference on Learning Representations (ICLR) 2017
 Communications of the ACM 2016
 Neural Information Processing Systems (NIPS) 2016, 2017
 International Journal of Robotics Research (IJRR) 2016, 2017
 Robotics: Science and Systems (RSS) 2016
 IEEE International Conference on Robotics and Automation (ICRA) 2016, 2017
 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2016, 2017
 IEEE Robotics and Automation Letters (RA-L) 2016, 2017

Workshop Organization:

Workshop on Deep Learning for Action and Interaction, NIPS 2016

Outreach

Women in Computer Science & Engineering, Co-President 2015-2016

Women in Computer Science & Engineering, Outreach Co-coordinator 2016-2017

Career Panels at Minorities in STEM events

NASA When I Grow Up Career Exploration Event, Graduate Pathways to STEM, SWE Parent Education C

Invited Talks

Learning Representations for Versatile Behavior. *RSS Workshop on New Frontiers for Deep Learning in Robotics, Boston, MA.* July 2017.

Learning through Interaction: Generalization in Robot Reinforcement Learning. *Symposium on Robot Learning, Berkeley, CA.* May 2017.

Learning through Interaction: Generalization in Robot Reinforcement Learning. *MIT.* April 2017.

Learning through Interaction: Generalization in Robot Reinforcement Learning. *Stanford University.* March 2017.

The Guided Policy Search Codebase. *Open-Source Software for Decision Making Workshop, Stanford University.* March 2017.

End-to-End Deep Robotic Learning. *Re-work Deep Learning Summit, San Francisco.* January 2017.

Guided Cost Learning and Connections to Generative Adversarial Modeling. *NIPS Deep Learning Symposium.* December 2016.

Large Scale Self-Supervised Robotic Learning. *NIPS Deep Reinforcement Learning Workshop.* December 2016.

Large Scale Self-Supervised Robotic Learning. *NIPS Neurorobotics Workshop.* December 2016.

Robotic Visuomotor Learning. *3DV Tutorial: Workshop on Understanding 3D and Visuomotor Learning.* October 2016.

Learning Visual State Spaces and Objectives. *Google DeepMind.* May 2016.

Learning Visuomotor Skills. *OpenAI.* March 2016.

Robotic Visuomotor Learning. *Redwood Center for Theoretical Neuroscience.* November 2015.

End-to-End Training of Deep Visuomotor Policies. *Google, Inc..* March 2015.

Efficient Text Detection in Human Environments. *MIT EECScon Undergraduate Research Conference.* April 2014.

Affiliations

Phi Beta Kappa Honor Society, Member	2014 – present
Tau Beta Pi Engineering Honor Society, Member	2013 – present
IEEE, Member	2013 – present
Eta Kappa Nu Electrical Engineering Honor Society, Member	2013 – present
Society of Women Engineers, Member	2010 – 2014

Press Coverage

“This Preschool is for Robots,” by Jack Clark. Bloomberg Business. 2 September 2015.

“Robot Demonstrates Human-Like Learning Abilities,” by Jonathan Bloom. ABC 7 News. 22 May 2015.

“Deep Learning Robots, DRC Practice, and Drone Pilot Competition,” by Evan Ackerman. IEEE Spectrum. 22 May 2015.

“New approach trains robots to match human dexterity and speed,” by John Markoff. The New York Times. 21 May 2015.