Rohan Chitnis

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Education

Massachusetts Institute of Technology, Cambridge, MA
GPA: 4.9 / 5.0. Minor: Econometrics.
Doctor of Philosophy in Electrical Engineering and Computer Science, May 2021 (expected).
Master of Science in Electrical Engineering and Computer Science, May 2018.

University of California, Berkeley, Berkeley, CA
Graduated with Highest Honors (GPA in top 3%). GPA: 3.95 / 4.0.
Bachelor of Science in Electrical Engineering and Computer Sciences, May 2016.
Relevant Coursework: Advanced Robotics, Machine Learning, Deep Reinforcement Learning, Artificial Intelligence, Computer Vision, Optimization, Graphics, Computational Geometry, Image Processing, Probability and Random Processes, Algorithms, Data Structures.

Research Experience

MIT Learning & Intelligent Sys. Lab (Adviser: Leslie Kaelbling) 09/2016 - Present

- Conduct research in artificial intelligence for robotics, toward a PhD.
- Focus on inference, planning, and learning for human-robot interactive settings.

Google Brain, Robotics (Research Intern, Adviser: Sergey Levine) 05/2017 - 09/2017

- Researched methods for speeding up deep reinforcement learning for robotics, by regressing on event outcomes to improve exploration.
- Designed and implemented a standalone framework for robotic learning that separates the environment, learning algorithms, and underlying TensorFlow models.

UC Berkeley Robot Learning Lab (Adviser: Pieter Abbeel) 02/2013 - 05/2016

- Performed work in (hierarchical) combined task and motion planning for execution of long-horizon robotic tasks such as laundry.
- Integrated reinforcement learning to improve existing approaches.
- Lead coordinator of lab outreach program, providing tours to visitors of varied ages.

UC Berkeley Oscii Lab (Adviser: John DeNero) 04/2015 - 05/2016

- Conducted research in Natural Language Processing.
- Improved performance of neural machine translation using Huffman code compression.

Conference Publications

Learning Quickly to Plan Quickly Using Modular Meta-Learning
Rohan Chitnis, Leslie Pack Kaelbling, Tomás Lozano-Pérez.
IEEE International Conference on Robotics and Automation (ICRA), 2019.

Learning What Information to Give in Partially Observed Domains
Rohan Chitnis, Leslie Pack Kaelbling, Tomás Lozano-Pérez.
Conference on Robot Learning (CoRL), 2018.

Integrating Human-Provided Information Into Belief State Representation Using Dynamic Factorization
Rohan Chitnis, Leslie Pack Kaelbling, Tomás Lozano-Pérez.
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2018.

Finding Frequent Entities in Continuous Data
Ferran Alet, **Rohan Chitnis**, Leslie Pack Kaelbling, Tomás Lozano-Pérez.
International Joint Conference on Artificial Intelligence (IJCAI), 2018.

Sequential Quadratic Programming for Task Plan Optimization
Dylan Hadfield-Menell, Christopher Lin, **Rohan Chitnis**, Stuart Russell, Pieter Abbeel.
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2016.

Guided Search for Task and Motion Plans Using Learned Heuristics
Rohan Chitnis, Dylan Hadfield-Menell, Abhishek Gupta, Siddharth Srivastava, Edward

Groshev, Christopher Lin, Pieter Abbeel.
IEEE International Conference on Robotics and Automation (ICRA), 2016.

Variable-Length Word Encodings for Neural Translation Models
Rohan Chitnis, John DeNero.
Conference on Empirical Methods in Natural Language Processing (EMNLP), 2015.

Modular Task and Motion Planning in Belief Space
Dylan Hadfield-Menell, Edward Groshev, **Rohan Chitnis**, Pieter Abbeel.
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2015.

Combined Task and Motion Planning Through an Extensible Planner-Independent Interface Layer
Siddharth Srivastava, Eugene Fang, Lorenzo Riano, **Rohan Chitnis**, Stuart Russell, Pieter Abbeel.
IEEE International Conference on Robotics and Automation (ICRA), 2014.

Honors / Awards

NSF GRFP Fellow, 2016. Awarded NDSEG Fellowship (declined).

Hertz Fellowship Finalist, 2016. One of 40 finalists for the Hertz Fellowship, a highly reputable fellowship for student researchers in the physical, biological, and engineering sciences.

Runner-up for the Computing Research Association (CRA) Outstanding Undergraduate Researcher Award (Male, PhD-granting institution), 2016. Highly prestigious award recognizing North American undergraduate students who show outstanding research potential in a field of computing.

Sole recipient of the EECS Mark D. Weiser Excellence in Computing Scholarship, 2015. Merit-based scholarship awarded to one student in the Berkeley EECS department each year for excellence in research.

Member of the EECS Honors Degree Program, concentration in Mathematics. Honors program with 20-30 students. Requirements include research and extended studies in concentration outside EECS.

UC Berkeley Outstanding Graduate Student Instructor (OGSI) Award recipient, 2015. Awarded to top 10% of Teaching Assistants across the university each year.

UC Berkeley Regents' and Chancellor's Scholar. Merit-based scholarship awarded to top 1.5% of applicants to UC Berkeley each year.

National Merit Scholar. Merit-based scholarship awarded to high-achieving high school students for partial college tuition payment.

Teaching

6.036: Introduction to Machine Learning. Fall 2018.
CS189: Introduction to Machine Learning. Spring 2016.
CS188: Introduction to Artificial Intelligence. Fall 2015.
CS61A: Structure and Interpretation of Computer Programs. Spring 2015, Spring 2014, Summer 2013.
CS61C: Great Ideas in Computer Architecture. Fall 2014.

Industry

Airbnb Inc., Search Ranking (Software Engineering Intern) 06/2016 - 08/2016

- Worked on incorporating mobile data into machine learning models used by the Search Ranking team. Collected and organized data using tools in Hive, Presto, and Scala.

eBay Inc., Checkout (Software Engineering Intern) 05/2014 - 08/2014

- Developed an end-to-end pipeline to create a model that classifies checkout transactions.

- Collected data using Hadoop MapReduce under the Apache Pig framework.

Technical Skills

Languages: Python, Java, Scala, C, C++, LaTeX.
Software: PyTorch, TensorFlow, Theano, Unix/Linux, Robot Operating System (ROS), OpenCV, Apache Pig, Apache Spark, Hadoop MapReduce.