# Rohan Chitnis

ronuchit@berkeley.edu | www.rohanchitnis.com | https://github.com/ronuchit

## Education

**University of California, Berkeley**, Berkeley, CA
**GPA: 3.951**
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

**UC Berkeley Robot Learning Lab** (Adviser: Pieter Abbeel) 02/2013 - Present

- Perform work in (hierarchical) combined task and motion planning for execution of long-horizon tasks.
- Worked on novel algorithm for task and motion planning under partial observability.
- Integrating reinforcement learning to improve generalizability and robustness of existing approaches.
- Coordinator and point of contact for lab outreach program, providing tours to visitors of varied ages.

**UC Berkeley Oscii Lab** (Adviser: John DeNero) 04/2015 - Present

- Conduct research in Natural Language Processing.
- Working on improving performance of neural machine translation, which uses a recurrent neural network with an attention mechanism for machine translation, by introducing novel Huffman code compression techniques.

## Publications

**Guided Search for Task and Motion Plans Using Learned Heuristics**
**Rohan Chitnis**, Dylan Hadfield-Menell, Abhishek Gupta, Siddharth Srivastava, Pieter Abbeel.
Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), 2016.

**Learning an Interface to Improve Efficiency in Combined Task and Motion Planning**
**Rohan Chitnis**, Dylan Hadfield-Menell, Siddharth Srivastava, Abhishek Gupta, Pieter Abbeel.
Proceedings of the IROS Workshop on Machine Learning in Planning and Control of Robot Motion (MLPC), 2015.

**Variable-Length Word Encodings for Neural Translation Models**
**Rohan Chitnis**, John DeNero.
Proceedings of the 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.
Proceedings of the 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.
Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), 2014.

## Honors/ Awards

**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

Develop projects, lead laboratory and discussion sections twice a week, hold office hours, organize review sessions, write and grade exams, and answer questions on online forum:
**CS189: Introduction to Machine Learning.** Spring 2016.

**CS188: Introduction to Artificial Intelligence.** Fall 2015.

- Built project teaching exact solution methods (e.g., policy iteration) in Markov decision processes.

**CS61A: Structure and Interpretation of Computer Programs.** Spring 2015, Spring 2014, Summer 2013.

- Integrated video lectures into online course textbook.

**CS61C: Great Ideas in Computer Architecture.** Fall 2014.

- Built homework teaching how to write and debug code in an assembly language.

## Industry

**eBay Inc., San Jose, CA.** Software Engineering Intern. 05/2014 - 08/2014

- Developed an end-to-end pipeline involving data querying and machine learning to build a classification model for checkout transactions, used in determining whether to offer buyers the option to place items on hold.
- Collected data using Hadoop MapReduce under the Apache Pig framework.
- Model achieved 85% accuracy on noisy data sets, using adaptive boosting with a decision tree classifier.

## Technical Skills

**Fluency in**: Python, Java, C, C++, Scheme, LaTeX.
**Software**: Unix, Robot Operating System (ROS), OpenCV, MongoDB, Apache Pig, Apache Spark, Hadoop MapReduce, scikit-learn, scikit-image.