Rohan Chitnis

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Education

Massachusetts Institute of Technology, Cambridge, MA
PhD in Computer Science, May 2021 (expected).

University of California, Berkeley, Berkeley, CA
Graduated with Highest Honors (GPA in top 3%). GPA: 3.951 / 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

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 tasks.
- 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.
- Worked 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

Sequential Quadratic Programming for Task Plan Optimization
Christopher Lin, Dylan Hadfield-Menell, **Rohan Chitnis**, Stuart Russell, Pieter Abbeel.
Proceedings of the ICAPS Workshop on Planning and Robotics (PlanRob), 2016.

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

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

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., San Francisco, CA (Software Engineering Intern) 06/2016 - Present

- Improving machine learning models used by the Search Ranking team.

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 AdaBoost with a decision tree.

Technical Skills

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