

Hang Ma

Contact Information	School of Computer Science McGill University 3480 University Street Montreal, Quebec, Canada H3A 2A7	Office: McConnell 108 Phone: 514-476-8506 Email: hang.ma@cs.mcgill.ca http://www.cs.mcgill.ca/~hma41/
Research Interests	Artificial intelligence, machine learning and robotics; probabilistic methods, graphs, combinatorics and algorithms.	
Education	Ph.D. Computer Science 2014 to present <i>University of Southern California, Los Angeles, CA, United States</i>	
	M.Sc. Computer Science 2012 to 2014 <i>McGill University, Montreal, QC, Canada</i> Thesis Supervisor: Joelle Pineau	
	B.Sci. Computing Science (First Class with Distinction) 2010 to 2012 <i>Simon Fraser University, Burnaby, BC, Canada</i> Ranked 1st in Faculty Graduated on President's and Dean's Honour Roll	
	B.Eng. Computer Science and Technology 2008 to 2010 <i>Zhejiang University, Hangzhou, Zhejiang, China</i> Excellent Student Awards Outstanding Student Leader Awards	
Honors and Awards	Annenberg Graduate Fellowship 2014 <i>University of Southern California</i>	
	Graduate Scholarship 2013, 2014 <i>McGill University</i>	
	Differential Fee Waiver 2013 <i>McGill University</i>	
	Open Scholarship 2012 <i>Simon Fraser University</i>	
	Alumni Scholarship 2011, 2012 <i>Simon Fraser University</i>	
	Entrance Scholarship 2010 <i>Simon Fraser University</i>	
	Scholarship for Outstanding Merits 2009, 2010 <i>Zhejiang University</i>	
	Scholarship for Outstanding Students 2009, 2010 <i>Zhejiang University</i>	
	Summer Social Practice Funds 2009 for excellent performance in Summer Social Practice Project, <i>Zhejiang University</i>	
Publications	H. Ma, J. Pineau. Information Gathering and Reward Exploitation of Subgoals for POMDPs . <i>Proceedings of the AAAI Conference on Artificial Intelligence (AAAI), 2015 (to appear)</i> .	
Teaching Experience	Teaching Assistant Sept 2012 to present <i>School of Computer Science, McGill University</i>	
	Theory of Computation, Fall 2013 (<i>COMP-330A</i> , 77 students)	

Foundations of Computing, Fall 2013 (*COMP-202, 668 students*)
Theory of Computation, Fall 2012 (*COMP-330A, 97 students*)

**Academic
Experience**

Research Assistant

May 2013 to present

Reasoning and Learning Lab, School of Computer Science, McGill University
Supervised by Professor Joelle Pineau

Study reinforcement learning, applications of machine learning and topics in robotics.
Current work: Design, implement and analyse a point-based randomized algorithms for planning in partially observable Markov decision processes (POMDPs) with its applications in various domains.

Course projects done:

Experimented on comparing a multiple kernel learning algorithm with other models of learning.

Designed and implemented a Monte Carlo localisation algorithms for ROS (Robot Operating System).

Implemented a motion planner for navigation in polygonal worlds by carrying out heuristic search in the adjacency graph for quadtree representation of the configuration space based on CGAL (Computational Geometry Algorithms Library).

Undergraduate Research Assistant

Apr 2012 to Aug 2012

Algorithms and Complexity Group, School of Computing Science, Simon Fraser University
Supervised by Professor Ramesh Krishnamurti

Researched in the area of combinatorial optimization and applications of linear programming.

Employed techniques of column generation and Lagrange relaxation in implementing and optimizing an approximation algorithm for the vehicle routing problem with skill sets in C++ with CPLEX package.

Visiting and Research Student

Sept 2011 to Dec 2011

Department of Combinatorics and Optimization, University of Waterloo

Supervised by Professor Jochen Könnemann and Doctor Konstantinos Georgiou

Studied LP-based approximation algorithms for the Steiner tree problem via iterative randomized rounding and presented families of graph instances that make approximation ratio bounds tight.

Attended weekly reading group and studied latest topics in the area of combinatorial optimization.

Individual Study

Jan 2011 to Apr 2011

School of Computing Science, Simon Fraser University

Supervised by Professor David Mitchell

Studied topics on integer linear programming (ILP) formulation and its transformation to satisfiability (SAT) problem, and developed optimization strategies for pseudo-Boolean constraints in specific NP-complete problems to pursue better performance of SAT or ILP solvers.

Smart Phone Application on Android Platform

Apr 2010 to Jul 2010

Chinese Student Research Training Program (SRTP)

School of Computer Science and Technology, Zhejiang University

Developed position based software applications for Android smart phone.

**Industrial
Experience**

Automated Test Associate

May 2011 to Dec 2011

SV&V JDE Tools Team, BlackBerry Ltd (formerly RIM), Waterloo, Ontario, Canada

Developed test cases for Java APIs for BlackBerry devices and executed automation test runs.

Developed software applications for BlackBerry Playbook based on Playbook Webworks platform with HTML5 and JQuery.

Standardized Tests *GRE*: Verbal: 700; Quantitative: 800; Analytical Writing: 3.5 Jul 2011

Skills *Programming Languages*: C/C++, Java, MATLAB, Shell script, Python, Haskell
Mathematical Tools: CGAL, CPLEX
Database: MySQL, SQL Server
Hardware Programming: Xilinx FPGA
Languages: English, Cantonese, Mandarin Chinese

Miscellaneous *Piano*: Performed individually or as accompanist on several school concerts.
Basketball: Won fourth place in school competition playing as a forward in a team.
Swimming: Scored points for the team in high school sports meeting.
Photography:
Served as photographer for various school conferences or other activities.
Won the Niagara Sustainability Initiative (NSI) First Annual Photo Contest. 2012

References

Joelle Pineau
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