

Rowan T. McAllister

CONTACT INFORMATION University of Cambridge, United Kingdom
p. +447523309416
e. rtm26@cam.ac.uk
w. mlg.eng.cam.ac.uk/rowan/

EDUCATION *Ph.D.* in machine learning **Sept 2012 – May 2017**
University of Cambridge, United Kingdom
Thesis: Bayesian Learning for Data-Efficient Control

M. Phil in robotics **Sept 2010 – Aug 2012**
Australian Centre for Field Robotics, University of Sydney, Australia
Thesis: Motion Planning with Stochastic Control over Unstructured Terrain

BE / BSci (Honours Class I) **Mar 2004 – Nov 2009**
University of Sydney, Australia
Majors: mechatronic-space engineering, mathematics, computer science, physics
Thesis: Autonomous Reconfiguration Planning in Modular Robots

PUBLICATIONS

- **McAllister, R.**, Gal, Y., Kendall, A., van der Wilk, M., Shah, A., Cipolla, R., Weller, A., “Concrete Problems for Autonomous Vehicle Safety: Advantages of Bayesian Deep Learning”, International Joint Conference on Artificial Intelligence (IJCAI), 2017
- **McAllister, R.**, “Bayesian Learning for Data-Efficient Control”, PhD thesis, University of Cambridge, 2017
- **McAllister, R.**, Rasmussen, C. , “Data-Efficient Reinforcement Learning in Continuous-State POMDPs”, arXiv (under review for NIPS, 2017)
- Gal, Y., **McAllister, R.**, Rasmussen, C., “Improving PILCO with Bayesian Neural Network Dynamics Models”, Data-Efficient Machine Learning workshop, ICML, 2016
- **McAllister, R.**, van der Wilk, M., Rasmussen, C. , “Data-Efficient Policy Search using PILCO and Directed-Exploration”, Data-Efficient Machine Learning workshop, ICML, 2016
- Peynot, T., Lui, A., **McAllister, R.**, Fitch, R., Sukkarieh, S., “Learned Stochastic Mobility Prediction for Planning with Control Uncertainty on Unstructured Terrain”, Journal of Field Robotics (JFR), 2014
- **McAllister, R.**, Peynot, T., Fitch, R., Sukkarieh, S., “Motion Planning and Stochastic Control with Experimental Validation on a Planetary Rover”, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2012
- **McAllister, R.**, “Motion Planning and Stochastic Control with Experimental Validation on a Planetary Rover”, Masters thesis, University of Sydney, 2012
- Peynot, T., Fitch, R., **McAllister, R.**, Alempijevic, A., “Resilient Navigation through Online Probabilistic Modality Reconfiguration”, International Conference on Intelligent Autonomous Systems (ICRA), 2012
- Peynot, T., Fitch, R., **McAllister, R.**, Alempijevic, A., “Autonomous Reconfiguration of a Multi-Modal Mobile Robot”, IEEE International Conference on Robotics and Automation (ICRA) workshop, 2011
- Fitch, R., **McAllister, R.**, “Hierarchical Planning for Self-Reconfiguring Robots Using Module Kinematics”, International Symposium on Distributed Autonomous Robotics Systems (DARS), 2010
- **McAllister, R.**, “Autonomous Reconfiguration Planning in Modular Robots”, honours thesis, University of Sydney, 2009

EMPLOYMENT **Uber Advanced Technologies Center**, Pittsburgh, United States **Oct 2015 – Dec 2015**
Machine Learning Specialist
I worked on Uber’s driverless car software as an intern.

Google, Sydney, Australia **Mar 2012 – Jun 2012**
Software Engineer Intern
Developed a Cron API for Google App Engine

Australian Centre for Field Robotics, Sydney, Australia

Research Intern

Dec 2009 – Mar 2010

Developed an algorithm which plans reconfigurations for Self Reconfiguring Modular Robotics (a continuation of my honours thesis)

National Australia Bank, Sydney, Australia

Computer Programmer

Dec 2007 – Aug 2008

Using a new method of constructing yield curves from interest rate models, have programmed a trading tool to value swaps. This began as a cadetship, and thereafter I continued as a casual employee

Accelerated Centre for Education, Sydney, Australia

Tutor, held advanced classes of English and Maths for school students in grades 5 - 10

2007

Thompson Design, Jandakot Airport, Fremantle, Australia

Engineer's Assistant

Jan 2007 – Feb 2007

Worked alongside aeronautical engineers inspecting aircraft, repairing damages, designing modifications and writing up engineering orders to certify technician work as work experience

St Andrew's College, University of Sydney, Australia

Tutor, taught MATLAB to university students

Mar 2006 – Jun 2006

Head Waiter, organised and oversaw college formal dinners

Mar 2004 – Nov 2006

SBF shipyards, Fremantle, Australia

Tradesman's Assistant

Jul 2003 – Dec 2003

Worked in areas of Aluminium boat construction such as plate bending, MIG welding, cabin interior

COMPUTING
SKILLS

Programming Languages: Matlab, Python, C++, Java, L^AT_EX, Vim
Operating Systems: Ubuntu, Windows

INVITED TALKS

- University of Western Australia, School of Mathematics and Statistics **24 Mar 2016**
- Carnegie Mellon University, The Robotics Institute **04 Dec 2015**
- Massachusetts Institute of Technology, CSAIL **02 Oct 2015**
- Harvard University, School of Engineering and Applied Sciences **02 Oct 2015**
- University of Toronto, Computer Science Department **29 Sept 2015**
- European Research Network System Identification Workshop, Sweden **21 Sept 2015**
- University of Cambridge, Kings College **24 Apr 2015**
- Microsoft Research Cambridge **03 Mar 2015**
- University of Sydney, Australian Centre for Field Robotics **02 Feb 2015**
- University of Cambridge, Engineering Division F Conference **05 Dec 2014**

HONOURS AND
AWARDS

- King College Cambridge Studentship
- University of Sydney Travelling Scholarship
- Alumni Scholarship, University of Sydney, awarded to 3 postgraduate students per year, 2011
- University of Sydney Postgraduate Award, a postgraduate research scholarship, 2011-2012
- Rio Tinto Centre for Mine Automation in Field Robotics Award from the Australian Centre for Field Robotics, a postgraduate research scholarship, 2010
- Academic Merit Prize from the University of Sydney, awarded to the top 300 graduating students based on academic performance, 2009
- Named in Dean's List of Excellence in Academic Performance each year enrolled at University of Sydney (meaning on track for Honours Class I), 2004 - 2009
- Graduates Prize for Senior Aeronautical Engineering from the University of Sydney (awarded annually to the top performing student), 2006

SPORT

Community clubs, Sydney

Soccer, regular member

2009 – 2012

Christ Church Grammar School, Perth and University of Sydney

Field Hockey, regular member

1995 – 2007

Western Australia Diving Association, Perth and University of Sydney

Springboard Diving

1998 – 2006

1st place at the University of Sydney intercollegiate diving competitions (2004-2006). Participated in the Pan Pacific games (international level) held in Sydney, ranked 9th of 14 representing Western Australia (2000)

Scuba Schools International, Perth

Scuba Diving, achieved open water diving certification, regular diver since

2004 – present

Hang Gliding Federation of Australia

Hang Gliding, achieved the Ground Tow Endorsement

2003

CULTURAL

- Participated in the 2011 RoboCup@Home international competition in Istanbul, coding a motion planner for the University of Technology of Sydney's entry, we received 4th place of 19
- Volunteering with the School Tutoring Program, University of Sydney, tutoring students of low socioeconomic rated schools in high school maths and physics (2005, Sept 2010 - 2012)
- Volunteering at Newtown Mission, Sydney, providing meals for the underprivileged (Apr 2007 - Dec 2010)
- 3 month solo backpacking venture through Latin America (2010)
- 6 month exchange to Austin, USA as part of undergraduate degree (Jan - Jun 2009)
- Participated in the National Student Leadership Forum in Canberra, a 4 day camp based on leadership and political discussions (2005)
- 6 month cultural exchange in France with a host family through NACEL exchange program (2003)
- Participated in the Australian International Model Solar Car Challenge race in Adelaide, receiving 1st place of 32 state finalists and set a new world record (2001)

LANGUAGES

English: native language

French: speak, read and write with moderate competence

Spanish: beginner