

Rafael dos Santos de Oliveira

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🌐 <https://rafaeloliveira.me>

Employment History

- 2019 – now **Research fellow**
Centre for Translational Data Science, The University of Sydney
Developing Bayesian methods for optimisation and inference in data science.
Supervisor: Prof. Sally Cripps
- 2018 – 2019 **Research fellow**
School of Computer Science, The University of Sydney, Australia.
Working with machine learning research on Bayesian optimisation for problems related to high-dimensional search spaces and data uncertainty.
Supervisor: Prof. Fabio Ramos
- 2015 – 2018 **Tutor**
School of Computer Science, The University of Sydney, Australia.
Tutored postgraduate subject Machine Learning and Data Mining (COMP5318) for 4 semesters, classes of 20-25 students.
- 2012 **Research assistant**
College of Engineering, University of Massachusetts Dartmouth, USA.
Worked on the circuit design for a complex-valued neural network. Supervisor: Prof. Howard Michel.
- 2011 **Research assistant**
Control Systems Laboratory, Federal University of Rio de Janeiro, Brazil.
Assisted on the design of a new hardware architecture for a remotely-operated underwater vehicle. Supervisor: Prof. Ramon R. Costa

Education

- 2014 – 2018 **Doctor of Philosophy** in Engineering and Information Technologies
The University of Sydney, Australia
Title: *Bayesian optimisation for planning under uncertainty*
Supervisor: Prof. Fabio Ramos
- 2009 – 2014 **Bachelor of Science** in Electronics and Computer Engineering
Federal University of Rio de Janeiro, Brazil
Title: *Design of the on-board electronics for a mobile robot applied to occupational therapy activities*
Supervisor: Prof. Ramon R. Costa
- 2012 **Study abroad**
University of Massachusetts, Dartmouth, USA
One year study abroad on Electronics and Computer Engineering subjects.

Research publications

Conferences

Barcelos, Lucas, **Rafael Oliveira**, Rafael Possas, Lionel Ott, and Fabio Ramos (2020). 'DISCO: Double likelihood-free Inference Stochastic Control'. In: *2020 IEEE International Conference on Robotics and Automation (ICRA)*. To appear. Paris, France: IEEE.

Oliveira, Rafael, Lionel Ott, Vitor Guizilini, and Fabio Ramos (2020). ‘Bayesian Optimisation for Safe Navigation Under Localisation Uncertainty’. In: *Robotics Research, the 18th International Symposium (ISRR)*. Cham: Springer, pp. 489–504.

Oliveira, Rafael, Lionel Ott, and Fabio Ramos (2019a). ‘Bayesian optimisation under uncertain inputs’. In: *The 22nd International Conference on Artificial Intelligence and Statistics (AISTATS)*. Naha, Japan.

— (2019b). ‘Distributional Bayesian optimisation for variational inference on black-box simulators’. In: *2nd Symposium on Advances in Approximate Bayesian Inference*. Vancouver, Canada.

Oliveira, Rafael, Fernando H. M. Rocha, Lionel Ott, Vitor Guizilini, Fabio Ramos, and Valdir Grassi (2018). ‘Learning to Race through Coordinate Descent Bayesian Optimisation’. In: *IEEE International Conference on Robotics and Automation (ICRA)*. Brisbane, Australia, pp. 6431–6438.

Oliveira, Rafael, Lionel Ott, and Fabio Ramos (2016). ‘Active Perception for Modelling Energy Consumption in Off-Road Navigation’. In: *Australasian Conference on Robotics and Automation (ACRA)*. Brisbane, Australia.

Workshops

Oliveira, Rafael, Lionel Ott, Vitor Guizilini, and Fabio Ramos (2018). ‘Leveraging Localisation Information into Bayesian Optimisation for Planning in Robotics’. In: *Workshop on Informative Path Planning and Adaptive Sampling (WIPPAS) at the 2018 IEEE International Conference on Robotics and Automation (ICRA)*. Brisbane, Australia.

Skills

- Languages **■** English (fluent) & Portuguese (native).
- Coding **■** Python (advanced), C/C++ (advanced), Java (intermediate), LaTeX (advanced), Robot Operating System (ROS, advanced), PyTorch (advanced), Scikit-Learn (intermediate), Numpy/JAX (advanced)
- Other **■** Church volunteering, leadership, swimming

Awards

- 2014 – 2018 **■ Brazil Science without Borders Ph. D. Full Scholarship**
Ministry of Education, Brazil.
Covered tuition, living stipends, air fares and health insurance costs for the Ph. D.
- 2016 – 2018 **■ Data61 Top-Up Scholarship**
Data61/CSIRO, Australia.
Top-up scholarship to help with living costs during Ph. D studies.
- 2015 – 2016 **■ NICTA Postgraduate Research Award**
National ICT Australia, Australia.
Top-up scholarship to help with living costs during Ph. D studies.
- 2012 **■ Brazil Science without Borders Study Abroad Full Scholarship**
Ministry of Education, Brazil.
Covered tuition, living stipends and air fares for a 1 year study abroad in the USA.