Curriculum Vitae

Bruno Lacerda

Oxford Robotics Institute
23 George Street
Oxford OX2 6NN
United Kingdom

+44 7701 069 657
bruno@robots.ox.ac.uk
https://www.ori.ox.ac.uk/people/bruno-lacerda/

RESEARCH INTERESTS

Sequential decision making, probabilistic model checking, multi-robot systems, service robotics, temporal logics, discrete event systems.

RESEARCH POSITIONS

September 2018 - Present: *Senior Researcher in Robotics*. University of Oxford, Oxford, United Kingdom.

September 2017 - September 2018: *Postdoctoral Research Assistant in Robotics*. University of Oxford, Oxford, United Kingdom.

Contribution to Projects:

- From Sensing to Collaboration: Engineering, Exploring and Exploiting the Building Blocks of Embodied Intelligence. *EPSRC Programme Grant.*
- Harvesting of Underwater Data from SensOr Networks (HUDSON). *UKRI.*
- Offshore Robotics for Certification of Assets (ORCA). *UKRI.*
- Robotics and Artificial Intelligence for Nuclear (RAIN). *UKRI.*

Teaching:

- 2018/2019, 2019/2020, Michaelmas Term: Probabilistic Model Checking.

Service:

- Organiser of the Oxford Robotics Research Group Seminars.
- 2018-2022: Engineering Research Associate at Pembroke College.
- Lead Robot Demos at Science and Ideas Festival, Blenheim Palace, and Pembroke College Open Days.

April 2013 - September 2017: *Research Fellow in Intelligent Robotics*. University of Birmingham, Birmingham, United Kingdom.

Contribution to Projects:

- Spatio-Temporal Representations and Activities for Cognitive Control in Long-Term Scenarios (STRANDS). *EU-FP7*.
- Novel Dynamic Vehicle Scheduling and Path Planning Algorithms for Mobile Robotic and AGV Warehouse Order Picking. *TSB Smart Award.*
- Learning the structure and dynamics of human environments to support intelligent mobile robot behaviour. *EPSRC First Grant.*

Teaching:

- 2014/2015, Semester 1: Intelligent Robotics.

September 2008 - December 2008: *Research Grantee.* Örebro University, Örebro, Sweden.

March 2008 - August 2008: *Research Grantee.* Instituto Superior Técnico, Lisbon, Portugal.

EDUCATION

2009 - 2013: *Doutoramento (PhD) in Electrical and Computer Engineering (Pass with merit).* Instituto Superior Técnico, Lisbon, Portugal.

Thesis: *"Supervision of Discrete Event Systems Based on Temporal Logic Specifications".*

2002 - 2007: *Mestrado (MSc) in Mathematics and Applications.* Instituto Superior Técnico, Lisbon, Portugal.

2002 - 2007: *Licenciatura (BSc) in Applied Mathematics and Computation.* Instituto Superior Técnico, Lisbon, Portugal.

INVITED TALKS

July 2021: Flavors of Uncertainty in Verification, Planning, and Optimization Workshop @ International Colloquium on Automata, Languages and Programming (ICALP), Virtual.
June 2021: OxCav Group Seminar Series, University of Oxford, UK.
April 2021: WhiteMech Group Seminar Series, Sapienza University, Italy.
April 2021: Alan Turing Institute Seminar Series on Multi-agent Systems, UK.
January 2020: DEEC Young PhD Lecture Series, Instituto Superior Técnico, Lisbon, Portugal.
February 2017: Workshop on Formal Methods in AI, University of Naples "Federico II", Italy.
March 2017: Computer Science Department Seminar Series, University of Liverpool, UK.
June 2017: Robolog Workshop, IRISA, Rennes, France.
September 2017: Full-day Tutorial at 4th "Lucia" PhD School on AI and Robotics, Lisbon, Portugal.

AWARDED FUNDING

2020: EPSRC Programme Grant: “From Sensing to Collaboration: Engineering, Exploring and Exploiting the Building Blocks of Embodied Intelligence” (~£6M). Writing of two work packages.
2020: UKRI Project: “Harvesting of Underwater Data from SensOr Networks (HUDSON)” (~£400K). Writing of work package.
2018: LEaDing Fellows, a Marie Curie COFUND Programme. 2 Year Fellowship, hosted at TU Delft. Research Proposal: “Cooperative Multi-Robot Transportation Systems with Guaranteed Quality of Service”. Declined opportunity and stayed at University of Oxford.
2016: Research Visit to Delft University of Technology. LES & EPS PERCAT Career Development Competition (University of Birmingham); Ramsay Research Travel Fund (School of Computer Science, University of Birmingham).

REVIEWING

Funding Agencies: Expert reviewer of personal grant proposals for the Dutch Research Council and the Israel Science Foundation.
Senior Program Committee: IJCAI, AAAI
Program Committee Member: NeurIPS; RSS; AAMAS; ICAPS; IJCAI; AAAI; ECAI; KR
Journal Reviewing: IEEE T-RO; JAIR; AIJ; IEEE TACON; IEEE RAM; JAAMAS; DEDS; RAS; IEEE T-ASE; IEEE RA-L; IEEE L-CSS; IEEE SMC; IEEE IS; ACM TOMACS; ACM TAAS; FAOC; EJCON; MDPI Robotics
Conference Reviewing: TACAS; DARS; ICRA; IROS; CASE; CDC; ACC.

SELECTED PUBLICATIONS

[1] “Multi-Unit Auctions for Allocating Chance-Constrained Resources”. A. Gautier, B. Lacerda, N. Hawes, and M. Wooldridge. In AAAI 2023.
[2] “Planning for Risk-Aversion and Expected Value in MDPs”. M. Rigter, P. Duckworth, B. Lacerda, and N. Hawes. In ICAPS 2022. **Best paper award runner-up.**
[3] “Congestion-Aware Policy Synthesis for Multirobot Systems.” C. Street, S. Pütz, M. Mühlig, N. Hawes, and B. Lacerda. IEEE T-RO 38(1), 2022.
[4] “Risk-Averse Bayes-Adaptive Reinforcement Learning”. M. Rigter, B. Lacerda, and N. Hawes. In NeurIPS 2021.
[5] “Probabilistic Planning with Formal Performance Guarantees for Mobile Service Robots.” B. Lacerda, F. Faruq, D. Parker and N. Hawes. IJRR 38(9), 2019.