Curriculum Vitae

Bruno Lacerda

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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). *UK Research and Innovation.*
- Offshore Robotics for Certification of Assets (ORCA). *UK Research and Innovation*.
- Robotics and Artificial Intelligence for Nuclear (RAIN). *UK Research and Innovation.*

Teaching:

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

Service:

- Co-organiser of the Oxford Robotics Research Group Seminars.
- 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.
- 2013/2014, Semester 1: Foundations of Computer Science (demonstrator).

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.
Thesis: *"Linear-Time Temporal Logic Control of Discrete Event Systems".*
2002 - 2007: *Licenciatura (BSc) in Applied Mathematics and Computation.* Instituto Superior Técnico, Lisbon, Portugal.

INVITED TALKS

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

July 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.
May 2016 - July 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).
September 2011 - December 2011: Research Visit to University of California at Los Angeles.
Funding for PhD Student Visits Abroad (Fundação para a Ciência e Tecnologia).
March 2010 - June 2010: Research Visit to University Carlos III de Madrid.
Funding for PhD Student Visits Abroad (Fundação para a Ciência e Tecnologia).

REVIEWING

Funding Agencies: Expert reviewer of project proposal for the NWO-Veni Programme
Senior Program Committee: IJCAI (2021).
Program Committee Member: NeurIPS (2020); RSS(2020); AAMAS (2014, 2016 - 2021); ICAPS (2016-2019); IJCAI (2017-2020); AAAI (2018-2021); ECAI (2016, 2018)
Journal Reviewing: JAIR; AAMAS; 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] "Minimax Regret Optimisation for Robust Planning in Uncertain Markov Decision Processes". Marc Rigter, Bruno Lacerda, and Nick Hawes. In AAAI. 2021.
[2] "Time-Bounded Mission Planning in Time- Varying Domains with Semi-MDPs and Gaussian Processes". Paul Duckworth, Bruno Lacerda, and Nick Hawes. In CoRL, 2020.
[3] "Multi-Robot Planning Under Uncertainty with Congestion-Aware Models". Charlie Street, Bruno Lacerda, Manuel Mühlig, and Nick Hawes. In AAMAS, 2020.
[4] "A Framework for Learning from Demonstration with Minimal Human Effort". Marc Rigter, Bruno Lacerda, and Nick Hawes. RA-L 5(2), 2020.
[5] "Probabilistic Planning with Formal Performance Guarantees for Mobile Service Robots." Bruno Lacerda, Fatma Faruq, David Parker and Nick Hawes. IJRR 38(9), 2019.