

Pr. Séverin Lemaignan

Social Robotics and AI

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37 years old



Scientific Focus **Robot cognition and decision making for safe social interactions:** data-driven understanding of social interactions; explainable AI; ethics of safe human-robot interactions; robust human-robot multi-modal interaction; symbolic and sub-symbolic knowledge representation.

Keywords **Social Robotics, Robotic Cognition, Responsible Human-Robot Interaction, Cognitive Architectures**

Education & Research Activities

- 2019– **Associate Professor in Social Robotics and AI, Bristol Robotics Lab, United Kingdom.**
Supervision of the Human-Robot Interaction research group; Supervision of the Driverless Vehicle research group.
Directly managing 20+ students and early career researchers.
- 2018–2019 **Senior Research Fellow in Robotics and Artificial Intelligence, Bristol Robotics Lab, United Kingdom.**
- 2017–2018 **Lecturer in Robotics, Plymouth University, Plymouth, United Kingdom.**
- 2015–2017 **EU Marie Skłodowska-Curie Post-doctoral fellow, Centre for Neural Systems and Robotics, Plymouth University, Plymouth, United Kingdom.**
Development and Implementation of a Theory of Mind for robots.
- 2013–2015 **Post-doctoral fellow, CHILI, EPFL, Lausanne, Switzerland.**
Interaction with Robots in Learning Environments – Supervision of the robotic group.
- 2012–2013 **Post-doctoral fellow, LAAS-CNRS, Toulouse, France.**
Spatial and Temporal Reasoning for Cognitive Robotic Architectures.
- 2008–2012 **Joint German-French PhD in Cognitive Robotics, LAAS-CNRS, Toulouse, France / Technical University of Munich, Germany.**
with High Distinction “Summa Cum Laude” – awarded CNRS’ **Best PhD in Robotics 2012**
Supervisors: Pr. Rachid Alami, CNRS; Pr. Michael Beetz, TUM.
- 2006–2007 **Research Engineer, INRIA, Paris, France.**
Development of semantic-aware control architectures for autonomous vehicles.
- 2002–2006 **Joint German-French MSc of Engineering, Karlsruhe Institute of Technology / ENSAM ParisTech.**
- 2004–2005 **MSc Artificial Intelligence for Learning Technologies, University Paris V, College of Mathematics and Computer Sciences, With Honours.**

Selected Fellowships & Grants

- 2020–2021 **University of the West of England, Robots4SEN: Social Robots to Support Children with Autism,**
Principal Investigator, £25K.
- 2019–2022 **InnovateUK, CAV Forth – Verification for Connected Autonomous Vehicles,**
Co-Investigator, £600K.
- 2015–2017 **EU H2020 Marie Skłodowska-Curie Individual Fellowship,**
Principal Investigator, € 195K.

Awards and Honours

- HRI’2017 **Best Paper Award ‘Design’.**
- HRI’2016 **Best Paper Award ‘Methods and Theory’.**
- AAAI’2015 **Best Video Award in Artificial Intelligence.**
- AAAI’2014 **Best Late Breaking Report Award.**
- 2012 **Best PhD in Robotics, CNRS.**
- 2012 **PhD with High Distinction, (“Summa Cum Laude”), TU Munich.**

Selected Recent Publications

As of Nov 2020, 70+ publications, 2600+ citations, *h*-index = 25, *i10*-index = 42 (*Google Scholar*).

→ [Link to complete list of publications, workshops and seminars.](#)

- Senft, E., Lemaignan, S., Baxter, P., Bartlett, M., Belpaeme, T. **Teaching robots social autonomy from in situ human guidance** *Science Robotics* 2019.
- Sallami, Y., Lemaignan, S., Clodic, A., Alami, R. **Simulation-based physics reasoning for consistent scene estimation in an HRI context** *IEEE IROS* 2019.
- Wallbridge, C., Lemaignan, S., Senft, E., Belpaeme, T. **Generating Spatial Referring Expressions in a Social Robot: Dynamic vs Non-Ambiguous** *Frontiers in AI and Robotics* 2019.
- Winkle, K., Lemaignan, S., Caleb-Solly, P., Leonards, U., Turton, A., Bremner, P. **Effective Persuasion Strategies for Socially Assistive Robots** *ACM/IEEE HRI* 2019.
- Bartlett, M., Edmunds, C. E. R., Belpaeme, T., Thill, S., Lemaignan, S. **What Can You See? Identifying Cues on Internal States from the Kinematics of Social Interactions** *Frontiers in AI and Robotics* 2019.
- Lemaignan, S., Edmunds E. R., C., Senft, E., Belpaeme, T. **The PInSoRo dataset: Supporting the data-driven study of child-child and child-robot social dynamics** *PLOS ONE* 2018.
- Senft, E., Baxter, P., Kennedy, J., Lemaignan, S., Belpaeme, T. **Supervised Autonomy for Online Learning in Human-Robot Interaction** *Pattern Recognition Letters* 2017.
- Lemaignan, S., Warnier, M., Sisbot, E.A., Clodic, A., Alami, R. **Artificial Cognition for Social Human-Robot Interaction: An Implementation** *Artificial Intelligence* 2017.

Supervision & Teaching Experience

Students supervision, Supervised 9 PhD and 20+ MSc students to date, (click here for full list).

- N. Webb (PhD, 2019-): *Data-Driven Human Robot Interaction*
- M. Bartlett (PhD, 2017-): *Data-Driven Social Robotics*
- K. Winkle (PhD, 2016-): *Persuasive human-robot interactions*
- C. Wallbridge (PhD, 2016-): *Spatial reasoning for Child-Robot Interaction*
- E. Senft (PhD, 2015-2018): *Shared autonomy for social human-robot interactions*
- A. Jacq (PhD, 2014-2015): *Mutual modeling and repair strategies in HRI*
- A. Özgür (PhD, 2014-2015): *Cellulo: haptic robotics for learning*
- S. Chandra (PhD, 2013-2017): *CoWriter project: learning by teaching handwriting to a robot*
- J. Fink (PhD, 2011-2014): *Long-term acceptance of robots in daily life & anthropomorphism*

2018– **University of the West of England, associate professor.**

teaching at MSc level; Human-Robot Interaction, data science, software engineering for robotics, ROS

2016–2018 **Plymouth University, lecturer.**

teaching at BSc & MSc level robotics, including HRI, ROS, Kalman filtering, localisation and planning, control architectures

2018–2016 **Guest lectures & Seminars, Plymouth University, EPFL, Université de Toulouse.**

ROS, simulation, ontologies, Python/C++ software engineering, computer graphics & 3D modelling.

2008–2011 **Teaching assistant, INSA Toulouse, Écoles des Mines de Paris.**

Prolog, Ontology Modeling, Java, ADA, SQL, Mechatronics.

Selected outreach activities

2019– **Cluster Lead for STEM outreach, University of the West of England.**

2019– **Scientific advisor for the WeTheCurious Bristol's science museum, Open City Lab project.**

2016– **UK & EU Robotics Weeks coordinator, University of Plymouth, University of the West of England.**

2011 **'Roboscopie' Human-Robot public theater performance, Science Day'11.**

<http://bit.ly/1LQpNWA>

2008–2011 **Toulouse's Cognitive Sciences Students Association, Co-chair.**

2008–2009 **South African SciFest festival, Science facilitator.**

1997–2012 **Executive Committee & Head of Educational Robotics, Planète Sciences, including coordination of the EU-ROBOT Robotic Competition.**

Technical Skills and Spoken Languages

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| Robotics | <ul style="list-style-type: none">o Expert in cognitive robotics and human-robot interactiono ROS, Symbolic knowledge manipulation experto Expert PR2, Pepper, Nao developero Contributor to ROS, OpenCVo Lead dev. MORSE simulator | Programming | <ul style="list-style-type: none">o Python, modern C++, Prolog, SmallTalko Deep-learning frameworks: pytorch, TensorFlowo Open-source enthusiast <p>GitHub: github.com/severin-lemaignan</p> |
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