Séverin Lemaignan

Senior Scientist
Social Robotics and AI

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39 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

2021–   **Senior Scientist in Social Robotics and AI**, *PAL Robotics, Spain*.
Research team leader, overseeing the development of Social Robots and autonomous Human-Robot Interactions capabilities.

2019–2021   **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.*
Ro-Man'2010	**Best Paper Award**.

Selected Recent Publications

As of Jan 2022, 90+ publications, 3400+ citations, h-index = 29, i10-index = 53 *(Google Scholar)*.
→ *Link to complete list of publications, workshops and seminars*.

○ Winkle, K., Senft, E., Lemaignan, S. **LEADOR: A Method for End-To-End Participatory Design of Autonomous Social Robots** *FrontiersIn AI and Robotics* 2021.

○ Wallbridge, C., Smith, A., Giuliani, M., Melhuish, C., Belpaeme, T., Lemaignan, S. **The Effectiveness of Dynamically Processed Incremental Descriptions in Human Robot Interaction** *ACM Transactions on Human-Robot Interaction* 2021.

○ Senft, E., Lemaignan, S., Baxter, P., Bartlett, M., Belpaeme, T. **Teaching robots social autonomy from in situ human guidance** *Science 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** *FrontiersIn 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, 2016-2020): *Persuasive human-robot interactions*
○ C. Wallbridge (PhD, 2016-2019): *Spatial reasoning for Child-Robot Interaction*
○ E. Senft (PhD, 2015-2018): *Shared autonomy for social human-robot interactions*
○ A. Jacq (PhD, 2014-2017): *Mutual modeling and repair strategies in HRI*
○ A. Özgür (PhD, 2014-2017): *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 EUROBOT Robotic Competition* .

Technical Skills and Spoken Languages

Robotics
- Expert in cognitive robotics and human-robot interaction
- ROS, Symbolic knowledge manipulation expert
- Expert PR2, Pepper, Nao developer
- Contributor to ROS, OpenCV
- Lead dev. MORSE simulator

Programming
- Python, modern C++, Prolog, SmallTalk
- Deep-learning frameworks: pytorch, TensorFlow
- Open-source enthusiast
  GitHub: `github.com/severin-lemaignan`