

# Emmanuel Senft

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## Curriculum Vitae

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### CONTACT

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Scholar <https://scholar.google.co.uk/citations?user=Yw1tGf4AAAAJ&hl=en>

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### RESEARCH STATEMENT

Robots I research and develop Interactive Machine Learning systems for robots interacting  
Learning to socially with humans. My current research is centred around SPARC (Supervised  
Interact Progressively Autonomous Robot Competencies), a framework of interaction allowing  
humans to teach robots to interact with humans in the real world. My research lies  
at the intersection between social Human-Robot Interaction, Interactive Machine  
Learning and Learning from Demonstrations.

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### EDUCATION

2014–2018 **PhD**, *Plymouth University*, Plymouth, UK, Obtained in November 2018.  
Supervisory team: Professor Tony Belpaeme, Dr. Paul Baxter and Dr Séverin Lemaignan

2011–2013 **Master of Science in Robotic and Autonomous Systems**, *Swiss Federal Institute of Technology Lausanne (EPFL)*, Lausanne, Switzerland, *Grade 5.5/6*.  
With Minor in Area and Cultural Studies.

2008–2011 **Bachelor of Science in Microengineering**, *Swiss Federal Institute of Technology Lausanne (EPFL)*, Lausanne, Switzerland, *Grade 5.29/6*.

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### PHD THESIS

Title *Teaching Robots Social Autonomy From In Situ Human Supervision*  
link <https://emmanuel-senft.github.io/ESThesis.pdf>

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### MASTER THESIS

Title *Hybrid Optimisation with Roombots* (Maximum possible grade obtained: 6/6)

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## SELECTED PUBLICATIONS

- 2018 **The PInSoRo Dataset: Supporting the Data-Driven Study of Child-Child and Child-Robot Social Dynamics** - S. Lemaignan, C. Edmunds, **E. Senft**, T. Belpaeme - PLOS ONE, 2018.
- 2017 **Supervised Autonomy for Online Learning in Human-Robot Interaction** - **E. Senft**, P. Baxter, J. Kennedy, S. Lemaignan and T. Belpaeme - Pattern Recognition Letters, 2017.
- How to Build a Supervised Autonomous System for Robot-Enhanced Therapy for Children with Autism Spectrum Disorder** - P.G. Esteban, ... , **E. Senft**, ... , T.Ziemke - Paladyn, Journal of Behavioral Robotics. De Gruyter Open, 2017.
- 2016 **From Characterising Three Years of HRI to Methodology and Reporting Recommendations** - P. Baxter, J. Kennedy, **E. Senft**, S. Lemaignan and T. Belpaeme - Proc. 11th ACM/IEEE International Conference on Human-Robot Interaction (alt.HRI) (HRI), New Zealand, Christchurch, March 2016.
- Social Robot Tutoring for Child Second Language Learning** - J. Kennedy, P. Baxter, **E. Senft** and T. Belpaeme - Proc. 11th ACM/IEEE International Conference on Human-Robot Interaction (HRI), New Zealand, Christchurch, March 2016.
- 2015 **SPARC: Supervised Progressively Autonomous Robot Competencies** - **E. Senft**, P. Baxter, J. Kennedy and T. Belpaeme. - Proc. 7th International Conference of Social Robotics (ICSR), Paris, France, October 2015.

Complete list with pdf <https://emmanuel-senft.github.io/publication.html>

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## PROFESSIONAL EXPERIENCE

- 2019 **PC Member**, *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*.
- 2017-2018 **PC Chair**, *AAAI Fall Symposium on AI for HRI (AI-HRI)*.
- since 2015 **Reviewer**, *Scientific Reports, JIST, SORO, ICRA, MECH, HAI, JHRI, IS, HRI, ICSR, HUMANOID, RO-MAN...*
- 2015-2017 **Demonstrator**, *ROCO 318 - Mobile and Humanoid Robots*, Plymouth University, UK.  
Leading practical work on bipedal gait design and control for 3rd year students.
- 2014 **Construction Assistant**, *Biorobotic Lab, EPFL*, Lausanne, Switzerland, Two months.  
Development of a controller using a camera and an IMU as inputs to allow autonomous docking on a passive grid using Roombots.
- 2012-2013 **Internship**, *EPFL+ECAL Lab*, Lausanne, Switzerland, Four months.  
Development of a driver for a multitouch tactile wall for a permanent interactive installation at the Red Cross Museum, Geneva, Switzerland.

## TECHNICAL SKILLS

Advanced	Python, ROS, QML, C++, Machine Learning (Neural Networks and Reinforcement Learning), Robotics, Nao, Human-Robot Interaction, Study Design, Academic Writing
Intermediate	Solidworks, ProEngineer, MatLab, C, JAVA, Pepper and YARP
Basic	Robot Simulator (Webots) and Assembly

## Languages

French	Mother tongue	
English	Advanced	<i>Conversationally fluent and technical</i>
German	Basic	<i>Level A2</i>
Italian	Elementary	<i>Level A1</i>
Mandarin	Elementary	<i>Level A1</i>

## OTHER EXPERIENCE

- 2016-2017 **Comittee member**, *Karate-UPSU*, Plymouth University, UK.  
Treasurer for the university karate club.
- 2014-2018 **Member**, *A+E*, Plymouth University, UK.  
Mountaineering, climbing and caving student club.
- 2014-2018 **Member**, *Karate-UPSU*, Plymouth University, UK.  
Karate student club.
- 2010-2013 **Comittee member**, *Jdr-Poly*, EPFL.  
Association for the promotion of Role Playing Games and Board Games on the campus.
- 2007-2013 **Scout Team Leader**, *Eclaireuses et Eclaireurs Unionistes de France*, Douvaine, France.  
Team management and leadership, organisation of events with 8-12 or 12-16 years old children with legal responsibility, member from 1998 to 2014.
- 2008-2012 **Member**, *Robopoly*, EPFL.  
Robotic Association.