

# William Schueller

PhD

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📁 [wschuell.github.io](https://wschuell.github.io)

Born 23/12/1988 in Mulhouse, France



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## Research experience

- 2019–2020 **Fairer credit schemes in collaborative works**, Complexity Science Hub Vienna.  
Studying collaboration networks in software development, trying to spot valuable contributions without analyzing the content.
- 2015–2018 **Active control of complexity growth in Language Games**, with *Pierre-Yves Oudeyer*, Flowers Project-team, INRIA Bordeaux Sud-Ouest.  
PhD work: Solving complexity growth issues in multi-agent models of language emergence by introducing active learning strategies. Defense: December 10, 2018.
- 2017 **Active control of complexity: trust in the Naming Game**, with *Vittorio Loreto*, Social Dynamics Lab, Sapienza University of Rome.  
Study of a 2nd type of active control in language emergence, definition of a principled algorithm
- 2014–2015 **Active Learning in language emergence models**, with *PY Oudeyer*, Flowers Project-team, INRIA Bordeaux Sud-Ouest.  
pre-PhD work: study of a few heuristics for controlling complexity growth in language emergence
- 2012 **Energy distribution dynamics in an anthill**, with *JL Deneubourg*, Unité d'Ecologie Sociale  
Université Libre de Bruxelles.  
Modelling food exchange and storage by ants, comparison with experimental data
- 2011 **Theoretical Models of Language**, with *Ramon Ferrer i Cancho*, Departament de Llenguatges i Sistemes Informàtics  
Universitat Politècnica de Catalunya, Barcelona.  
Using approaches inherited from information theory and statistical mechanics
- 2010 **Large scale experiment for the understanding of ultrasonic scattering by red blood cells aggregates**, with *Emilie Franceschini*, Laboratoire de Mécanique et d'Acoustique, Marseille.  
Experimental protocol setting, data acquisition and comparison with theoretical values

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## Education

- 2017 **Summer School on Methods for Computational Social Science**.  
Sant'Antioco, Sardinia, Italy
- 2016 **International Summer School on Creativity and Evolution in Games, Language, Robots, Life and Art**, Como, Italy.
- 2011–2012 **M2 (2<sup>nd</sup> year of Master)**, *Complex Systems Modelling*.  
ENS de Lyon and IXXI (Institut des Systèmes Complexes Rhône-Alpin)
- 2010–2011 **M1 (1<sup>st</sup> year of Master)**, *Matter Sciences (Physics)*, Semester *Genetics and Molecular Biology*.  
Ecole Normale Supérieure de Lyon
- 2009–2010 **Licence (Equivalent to BSc)**, *Matter Sciences (Physics)*.  
Ecole Normale Supérieure de Lyon

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## Teaching

- 2017-2018 **Databases**, IUT de Bordeaux, Computer Science.  
DB conception, SQL syntax. Course, practical work and projects
- 2017-2018 **System**, IUT de Bordeaux, Computer Science.  
Practical work: Linux usage, shell commands, SSH, FTP, ...
- 2012-2014 **Maths and Physics Lecturer**, Galatasaray University, Istanbul.  
Maths and Physics oral examinations, Physics experiments, French for Mathematics

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## Computer skills

Python	+++	Git	++
L <sup>A</sup> T <sub>E</sub> X	+++	Matlab	++
SQL	+++	HTML/CSS	++
GNU/Linux	+++	JavaScript	++
MongoDB	++	C/C++	+
Cluster (Torque,Slurm)	++		

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## Software

- NamingGamesAL** Python library for simulating Language Games  
Source: <https://github.com/flowersteam/naminggamesal>
- Experiment Manager** Python library for managing computer simulations  
Source: [https://github.com/wschuell/experiment\\_manager](https://github.com/wschuell/experiment_manager)
- Naming Game User Experiment** Django project for a research experiment  
Source: [https://github.com/wschuell/ng\\_userxp](https://github.com/wschuell/ng_userxp)  
Game: <http://naming-game.space>
- Explanatory Notebooks** Reproducing scientific results of publications/PhD  
Source: [https://github.com/wschuell/notebooks\\_cogsci2018](https://github.com/wschuell/notebooks_cogsci2018)  
Source: [https://github.com/wschuell/notebooks\\_thesis](https://github.com/wschuell/notebooks_thesis)

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## Languages

- Fluent:** French, English, Spanish, German, Italian, Turkish, Catalan  
**Basic Conversations:** Euskara

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## Invited Talks

- June 2019 **Active control of complexity growth in a multi-agent model: the Naming Game**, *Centre de Recherche Interdisciplinaire*, Paris.
- April 2018 **Emergence of language: Active negotiation of new linguistic conventions**, *Jagellonian University in Kraków, Institute of Psychology*.
- July 2015 **Active learning and active control of complexity growth in naming games**, *Complexity & Quantitative Linguistics Lab, Univ. Politècnica de Catalunya*, Barcelona.

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## Publications

- 2019 Pierre-Yves Oudeyer, George Kachergis, and William Schueller. **Computational and Robotic Models of Early Language Development: A Review.** *arXiv preprint arXiv:1903.10246*, 2019.
- 2018 William Schueller, Vittorio Loreto, and Pierre-Yves Oudeyer. **Complexity Reduction in the Negotiation of New Lexical Conventions.** In *40th Annual Conference of the Cognitive Science Society (CogSci 2018)*, Madison, WI, United States, July 2018.  
William Schueller. *Active Control of Complexity Growth in Language Games.* PhD thesis, Université de Bordeaux, December 2018.
- 2016 W. Schueller and P.-Y. Oudeyer. **Active Control Of Complexity Growth In Naming Games: Hearer’s Choice.** In *The Evolution of Language: Proceedings of the 11th International Conference (EVOLANGX11)*, 2016.
- 2015 W. Schueller and P.-Y. Oudeyer. **Active Learning Strategies and Active Control of Complexity Growth in Naming Games.** In *the 5th International Conference on Development and Learning and on Epigenetic Robotics*, Providence, RI, United States, 2015.