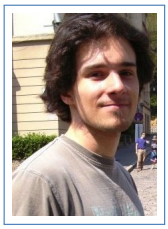
William Schueller



PhD

✉ *william.schueller@gmail.com*
Born 23/12/1988 in Mulhouse, France

Research experience

2020– **Socio-technical systemic risk in open-source software ecosystems**, Complexity Science Hub Vienna.
Constituting relevant data collection pipelines for studying propagation of risk through both developer activity and package dependency network. Defining health measures at the system level and evaluating efficiency of intervention policies.

2020– **Systemic Risk in the Food Supply Chain**, Complexity Science Hub Vienna.
Collect, analyze and visualize data from the main actors of the Austrian food supply chain. 2021 Prototype: Modeled transfers of millions of pigs between tens of thousands of facilities (from farms to supermarket and to the population) in an interactive network simulation.

2019–2020 **Fairer credit schemes in collaborative works**, Complexity Science Hub Vienna.
Studying collaboration networks in software development

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.

2014–2015 **Active Learning in language emergence models**, *with PY Oudeyer*, Flowers Project-team, INRIA Bordeaux Sud-Ouest.

2012 **Energy distribution dynamics in an anthill**, *with JL Deneubourg*, Unité d'Ecologie Sociale Université Libre de Bruxelles.

2011 **Theoretical Models of Language**, *with Ramon Ferrer i Cancho*, Dpt de Llenguatges i Sistemes Informàtics Univ. Politècnica de Catalunya, Barcelona.

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.

Education

2018 **PhD in Computer Science**, *Active Control of Complexity Growth in Language Games*, INRIA Bordeaux Sud-Ouest/ Université de Bordeaux.

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*.

2010–2012 **Master**, *Physics of Complex Systems*, Semester *Genetics and Molecular Biology*.
ENS de Lyon and IXXI (Institut des Systèmes Complexes Rhône-Alpin)

2009–2010 **Licence (Equivalent to BSc)**, *Physics*, Ecole Normale Supérieure de Lyon.

Teaching

2017-2018 **Databases**, IUT de Bordeaux, Computer Science.
DB design, 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

Computer skills

GNU/Linux system admin.	Expert	MongoDB	Good
SQL (PostgreSQL,SQLite)	Expert	Matlab	Good
Python	Expert	HTML/CSS	Good
LaTeX	Advanced	JavaScript	Good
Cluster (Torque,Slurm)	Advanced	R	Basic usage
Git	Advanced	C/C++	Basic usage
Docker	Advanced	Rust	Basic usage

Open-Source Software

RepoDepo Python SQLite/PostgreSQL adaptors to build large datasets of open-source software repositories activity and statistics (e.g. the whole ecosystem around the Rust programming language).
Source: https://github.com/wschuell/repodepo

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

Naming Game User Experiment Web application for a research experiment (using Python)
Source: https://github.com/wschuell/ng_userxp
Game: http://prolific.naming-game.space

Explanatory Notebooks Reproducing scientific results of publications/PhD
Source: https://github.com/wschuell/notebooks_cogsci2018
Source: https://github.com/wschuell/notebooks_thesis

Languages

Mother tongue: French
Fluent: English, Spanish, German, Italian, Turkish, Catalan
Basic Knowledge: Euskara, Farsi

Publications

2022 Johannes Wachs, Mariusz Nitecki, **Schueller, William**, and Axel Polleres. The geography of open source software: Evidence from github. *Technological Forecasting and Social Change*, 176:121478, 2022.

Schueller, William, Johannes Wachs, Vito DP Servedio, Stefan Thurner, and Vittorio Loreto. Evolving collaboration, dependencies, and use in the rust open source software ecosystem. *arXiv preprint arXiv:2205.03597*, 2022.

Schueller, William and Johannes Wachs. Modeling interconnected social and technical risks in open source software ecosystems. *arXiv preprint arXiv:2205.04268*, 2022.

Schueller, William, Christian Diem, Melanie Hinterplattner, Johannes Stangl, Beate Conrady, Markus Gerschberger, and Stefan Thurner. Propagation of disruptions in supply networks of essential goods: A population-centered perspective of systemic risk. *arXiv preprint arXiv:2201.13325*, 2022.

Niklas Reisz, Vito DP Servedio, Vittorio Loreto, **Schueller, William**, Márcia R Ferreira, and Stefan Thurner. Loss of sustainability in scientific work. *New Journal of Physics*, 2022.

2020 Márcia R Ferreira, Niklas Reisz, **Schueller, William**, Vito DP Servedio, Stefan Thurner, and Vittorio Loreto. Quantifying exaptation in scientific evolution. In *Understanding Innovation Through Exaptation*, pages 55–68. Springer, 2020.

2019 Pierre-Yves Oudeyer, George Kachergis, and **Schueller, William**. Computational and robotic models of early language development: A review. *International Handbook of Language Acquisition*, 2019.

2018 **Schueller, William**, 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.

Schueller, William. *Active Control of Complexity Growth in Language Games*. PhD thesis, Université de Bordeaux, December 2018.

2016 **Schueller, William** 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 **Schueller, William** 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.

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 Pyschology*.

July 2015 **Active learning and active control of complexity growth in naming games**, *Complexity & Quantitative Linguistics Lab, Univ. Politècnica de Catalunya*, Barcelona.