

William Schueller

PhD

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Born 23/12/1988 in Mulhouse, France



Research experience

- 2020–2024 **Systemic Risk in the Food Supply Chain**, University of Veterinary Medicine, Vienna and Complexity Science Hub Vienna
Collect and analyze product flows at the facility level from the main actors of the Austrian food supply chain (private and public data providers). 2021 Prototype: Pigs and pork meat from farms to supermarkets and to the population. 2022-2024: Extension to the network for other relevant product types as defined by the Ministry of Agriculture.
- 2020–2024 **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.
- 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
L ^A T _E X	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>

Languages

Mother tongue: French

Fluent: English, Spanish, German, Italian, Turkish, Catalan

Basic Knowledge: Basque, Farsi, Hungarian

Publications

- 2024 Christian Diem, **Schueller, William**, Melanie Hinterplattner, Johannes Stangl, Beate Conrady, Markus Gerschberger, and Stefan Thurner. Supply network stress-testing of food security on the establishment-level. *to be published in International Journal of Production Research*, 2024.
- 2023 **Schueller, William** and Johannes Wachs. Modeling interconnected social and technical risks in open source software ecosystems. *Minor revisions at ACM Collective Intelligence*, 2023.
- 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 D. P. Servedio, Stefan Thurner, and Vittorio Loreto. Evolving collaboration, dependencies, and use in the rust open source software ecosystem. *Scientific Data*, 9(1):703, Nov 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 (EVLANGX11)*, 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.