Paul Cousin

✉ paul.cousin@etu.u-paris.fr　　🌐 paulcousin.net　　🆔 0000-0002-3866-7615　　⌗ paulcousin

Education

International Master's Degree in Physics Of Complex Systems　　**Sep. 2023 – Ongoing**
SISSA & ICTP & PoliTO & Paris Cité & Sorbonne & Paris Saclay　　*Trieste – Turin, Italy & Paris, France*

International Bachelor's Degree in Physics (with Highest Honors)　　**Jan. 2021 – May 2023**
Université Grenoble Alpes & University of North Carolina at Chapel Hill　　*Grenoble, France & Chapel Hill, USA*

Diploma of Advanced Audiovisual Technician, Specialized in Editing　　**Sep. 2011 – May 2013**
Lycée de la Communication　　*Metz, France*

Training

Excellence Internship granted by the Université Grenoble Alpes　　**June – July 2022**
Laboratoire Jean Kuntzmann (Applied Mathematics & Informatics)　　*Grenoble, France*

Publications

P. Cousin, "Triangular Automata: The 256 Elementary Cellular Automata of the Two-Dimensional Plane," Complex Systems, 33(3), 2024 pp. 253–276. doi.org/10.25088/ComplexSystems.33.3.253.

P. Cousin and A. Maignan, "Organic Structures Emerging From Bio-Inspired Graph-Rewriting Automata," 2022 24th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC), Hagenberg / Linz, Austria, 2022, pp. 293-296. doi.org/10.1109/SYNASC57785.2022.00053.

Conferences

June 20, 2025 at the **Wolfram Institute**: "Triangular Automata: The 256 Elementary Cellular Automata of the Two-Dimensional Plane". 🔗

September 12, 2022 at the **24th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing**: "Organic Structures Emerging From Bio-Inspired Graph-Rewriting Automata".

Projects

Triangular Automata　　**2023 – 2025**
- Website 🔗
- Mathematica package 🔗
- OEIS entries 🔗
- YouTube channel 🔗

Graph-Rewriting Automata　　**2022**
- Website 🔗
- Python package 🔗
- Mathematica package 🔗

Coursework

Upcoming　　**2025**
- Statistical Field Theory 🔗
- Computational Science 🔗
- Stochastic processes 🔗
- Non-linear physics 🔗

Graduate courses　　**2023 – 2025**
- Probability and Information Theory 🔗
- Quantum Theory of Condensed Matter 🔗
- Statistical Physics 🔗
- Algorithms for Optimization, Inference and Learning 🔗
- Advanced Numerical Methods 🔗
- Advanced Experimental Physics 🔗
- Advanced Quantum Mechanics 🔗
- Biophysics 🔗
- Introduction to Systems and Computational Neuroscience 🔗
- Ecology and Evolution 🔗

Selected undergraduate courses **2022 − 2023**
- Cosmology 🔗
- Theory, Evidence, and Understanding in Science 🔗
- Functions of a Complex Variable with Applications 🔗
- Coherent Optics 🔗

Certified Online Courses **2021 − 2024**
- Computation in Complex Systems 🎗
- Foundations & Applications of Humanities Analytics 🎗
- Fractals and Scaling 🎗
- Game Theory I 🎗 and II 🎗
- Introduction to Agent-Based Modeling 🎗
- Introduction to Complexity 🎗
- Introduction to Dynamical Systems and Chaos 🎗
- Introduction to Mathematical Thinking 🎗
- Learn JavaScript 🎗
- Learn Python 3 🎗
- Machine Learning 🎗
- Nonlinear Dynamics: Mathematical and Computational Approaches 🎗
- Origins of Life 🎗
- Skepticism 🎗
- The Git & Github Bootcamp 🎗

Self-studied textbooks
- Spacetime and Geometry, by Sean Carroll 📖

Skills

Programming: Mathematica, Python, LaTeX, HTML/CSS, JavaScript, NetLogo, VS Code, GitHub

Arts: Music 🔗, Video Production 🔗

Languages: French (*native*), English (*fluent*), Italian, Esperanto, Toki Pona (*intermediate*), Spanish (*elementary*)

Work Experience

Nurseryman **2017 − 2020**
Creation of a professional activity in agriculture *Verrue, France*

Founder & President **2016 − 2018**
Association invested in circular economy for ecology and social fairness *Loudun, France*

Logistics Coordinator **Aug. 2015 − July 2016**
Agricultural training organization promoting sustainable practices *Grasse, France*