

Lucas Gautheron

Computational Models of Human & Social Behavior

+33 6 79 23 86 47
✉ lucas.gautheron@gmail.com
🌐 lucascgautheron.github.io
29/01/1995

Areas of Specialization collective intelligence, computational social science

Education

- 2022-2025 Ph.D. candidate, Computational Sociology**, *Interdisciplinary Centre for Science and Technology Studies, Wuppertal*, Germany
“Social dilemmas in high-energy physics: a computational approach”. Supervisors: Thomas Heinze & Radin Dardashti. 3^{1/2}-year contract.
- 2021-2022 M.A., History and Philosophy of Science**, *Université Paris-Cité*, [Class rank: 1st]
Thesis : “Too Beautiful to be False, or Too Beautiful to be True? Searching for supersymmetry at the *Large Hadron Collider*”. Supervisors: Olivier Darrigol & Elisa Omodei.
- 2014-2018 Master 1, Theoretical and Experimental Physics**, *Ecole Normale Supérieure de Cachan (Paris-Saclay)*
Full scholarship & civil-servant status.
- 2012-2014 PCSI/PC***, *Lycée Berthollet, Annecy*
Mathematics, physics and chemistry. Preparation for the competitive entrance exams of the Écoles Normales Supérieures (top research oriented higher education institutions).

Research

- Mar 2023 Research Assistant (linguistics, part time)**, *Laboratoire de Sciences Cognitives et Psycholinguistique (LSCP - DEC - École Normale Supérieure)*, Paris
(on-going) Investigating correlations between speech heard and produced by young infants.
- Feb 2023 Visiting PhD student**, *Medialab, Sciences Po Paris*
- Aug 2023**
- Sep 2020 Engineer (linguistics)**, *Laboratoire de Sciences Cognitives et Psycholinguistique (LSCP - DEC - École Normale Supérieure)*, Paris
- Nov 2021** Language acquisition across cultures through naturalistic long-form audio recordings.
- Oct 2016 Research Internship (astrophysics)**, *Laboratoire Univers et Théories (LUTH - INSU - CNRS)*, Paris Meudon
- Jan 2017** Influence of the nuclei distribution on weak interactions’ rates in core-collapse supernovae.
- May 2016 Research Internship (particle physics)**, *Laboratoire de Physique Nucléaire et des Hautes Énergies (LPNHE - IN2P3 - CNRS)*, Paris
- Jul 2016** Diphoton analysis and phenomenology for the ATLAS experiment.
- Oct 2015 Research Internship (astrophysics)**, *Laboratoire d’Annecy-Le-Vieux de Physique Théorique (LAPth - IN2P3 - CNRS)*, Annecy-Le-Vieux
- Jan 2016** History of modern cosmology & science communication (website – 7 500 users/year)
- May 2015 Research Internship (particle physics)**, *Laboratoire d’Annecy-Le-Vieux des Particules (LAPP - IN2P3 - CNRS)*, Annecy-Le-Vieux
- Jul 2015** Particle physics for the ATLAS experiment.

Preprints

- [A1] **L. Gautheron**. “Balancing Specialization and Adaptation in a Transforming Scientific Landscape”. [under review]. July 2024.

Peer-Reviewed Publications

- [A2] A. Cristia, **L. Gautheron**, Z. Zhang, B. Schuller, C. Scaff, C. Rowland, O. Räsänen, L. Peurey, M. Lavechin, W. Havard, C. Fausey, M. Cychosz, E. Bergelson, H. Anderson, N. Al Futaisi, and M. Soderstrom. “Establishing the reliability of metrics extracted from long-form recordings using LENA and the ACLEW pipeline”. In: *Behavior Research Methods* (Sept. 2024).
- [A3] **L. Gautheron** and E. Omodei. “How research programs come apart: The example of supersymmetry and the disunity of physics”. In: *Quantitative Science Studies* 4.3 (Dec. 2023).

- [A4] A. Cristia, **L. Gautheron**, and H. Colleran. “Vocal input and output among infants in a multilingual context: Evidence from long-form recordings in Vanuatu”. In: *Developmental Science* 26.4 (Feb. 2023).
- [A5] **L. Gautheron**, N. Rochat, and A. Cristia. “Managing, storing, and sharing long-form recordings and their annotations”. In: *Language Resources and Evaluation* 57 (Feb. 2022).
- [A6] M. Lavechin, M. de Seyssel, **L. Gautheron**, E. Dupoux, and A. Cristia. “Reverse Engineering Language Acquisition with Child-Centered Long-Form Recordings”. In: *Annual Review of Linguistics* 8.1 (Jan. 2022).

Invited Talks

- [T1] **L. Gautheron**. “Correlational analyses of the effects of caregivers’ speech behaviour on children’s speech production”. Department of Linguistics, UCLA, Los Angeles, CA, United States. June 2024.
- [T2] **L. Gautheron**. “Algorithmic bias in correlational analyses of the effects of caregivers’ speech behaviour on children’s speech production”. Daylong Audio Recordings of Children’s Linguistic Environments (DARCLE), online. May 2024.
- [T3] **L. Gautheron**. “Balancing Specialization and Adaptation in a Transforming Scientific Landscape: Modelling scientists’ behavior with Natural Language Processing”. NLP Seminar, LATTICE, Montrouge, France. Nov. 2023.
- [T4] **L. Gautheron**. “Too beautiful to be false, or too beautiful to be true: supersymmetry and the future of high-energy physics”. 2JM seminar, Sciences Po, Paris, France. May 2023.
- [T5] **L. Gautheron** and A. Cristia. “A python package for long-form recordings and their annotations”. Bergelson Lab, Duke University, NC, United States [online]. June 2021.

Contributed Talks

- [T6] **L. Gautheron**. “Social dilemmas in high-energy physics”. Workshop “Methodological Transformations in Fundamental Physics”. Sept. 2024.
- [T7] **L. Gautheron**. “A dialogue between philosophy of science and computational studies of science illuminates the crisis of fundamental physics”. Workshop “Philosophy of Science meets Quantitative Science Studies”, Turin, Italy. May 2024.
- [T8] **L. Gautheron**. “From Colliders to Cosmos: Dynamics of Cooperation and Collaboration in High-Energy Physics”. Summer school “Collaboration and Interdisciplinarity in Science and Technology”, Wuppertal, Germany. Sept. 2023.
- [T9] **L. Gautheron**. “Probing Socio-Epistemic Dynamics in High-Energy Physics Using the Inspire HEP Database”. Conference “Big Data & History and Philosophy of Science”. May 2023.
- [T10] **L. Gautheron**. “La désunité de la physique des hautes-énergies”. XIV^e Congrès de la Société française d’histoire des sciences et des techniques: symposium “La physique de l’après Seconde guerre mondiale, entre ruptures et continuités”, Bordeaux, France. Apr. 2023.
- [T11] **L. Gautheron**. “The many faces of supersymmetry: Supersymmetry across subcultures of High-Energy Physics, 1971–2019”. 2022 History of Science Society Annual Meeting: group session on Historical Epistemology of Particle Physics and Quantum Gravity, Chicago, IL, United States. Nov. 2022.
- [T12] **L. Gautheron**. “Who trusts supersymmetry? Probing quantitative methods for investigating research orientations in High-Energy Physics”. 4th International Spring School of the Epistemology of the Large Hadron Collider: The History, Philosophy and Sociology of Large Scale Experiments, Wuppertal, Germany. Mar. 2022.
- [T13] **L. Gautheron**, M. Lavechin, R. Riad, C. Scaff, and A. Cristia. “Longform recordings : Opportunities and challenges”. In: *LIFT 2020 - 2èmes journées scientifiques du Groupement de Recherche “Linguistique informatique, formelle et de terrain”*. Ed. by T. Poibeau, Y. Parmentier, and E. Schang. Montrouge / Virtual, France: CNRS, Dec. 2020.

Poster presentations

- [P1] **L. Gautheron**. “Balancing Specialization and Adaptation in a Transforming Scientific Landscape”. 10th International Conference on Computational Social Science (IC2S2), Philadelphia, PA, United States. July 2024.

Teaching and training

Dec. 13th 2024 **(Scheduled) Guest Lecturer in Philosophy**, “Agent-Based Modelling meets Data: mixed formal/empirical approaches for the philosophy of science”, Ruhr University Bochum, Germany

Jun. 17th **Tutorial for Language Acquisition researchers**, “*LongFoRMer: A software for managing and exploiting longform recordings and their annotations*”, UCLA, Department of Linguistics, Los Angeles, CA, United States
2024

[B1] S. Pisani, L. Gautheron, and A. Cristia. *Long-form recordings: From A to Z*. 2021.

Service

2024 **Workshop “Methodological Transformations in Fundamental Physics” (September 16th-18th)**, Co-organizer, Wuppertal, Germany

Graduate Workshops and Summer Schools attended

2024 **Santa Fe Institute Graduate Workshop in Computational Social Science Modeling and Complexity**, Santa Fe, NM, United States

2023 **Summer school “Collaboration and Interdisciplinarity in Science and Technology”**, Interdisciplinary Summer School Series in Higher Education Research and Science Studies, Wuppertal, Germany

2022 **Spring school “The History, Philosophy and Sociology of Large Scale Experiments”**, 4th International Spring School of the Epistemology of the Large Hadron Collider, Wuppertal, Germany

Grants

2023 **G-Research**, Grants for PhD students and postdocs in quantitative fields; £1 000

Journalism

Dec 2019 **President & Publication Director**, *Société de Production Le Média*, Montreuil

Nov 2020 Head of a production company with 12+ full-time workers.

Sep 2018 **Journalist**, *Le Média*, Montreuil

Sep 2020 Data journalism and book reviews, text & video (articles cited in research papers and books, and in an appeal to the French constitutional court).

Selected press articles

[M1] **L. Gautheron** and C. Gence. “[DATA] Les morts invisibles du coronavirus : la vérité derrière les chiffres officiels (The Hidden Toll of Coronavirus: Revealing the Truth Beyond Official Numbers)”. In: *Le Média* (Apr. 4, 2020).

[M2] **L. Gautheron** and C. Gence. “[DATA] Lutte contre le COVID-19 : oui, la lenteur de l’État français a tué (Fatal Sluggishness: How France’s COVID-19 Response Cost Lives)”. In: *Le Média* (Apr. 23, 2020).

[M3] **L. Gautheron**. “Référendum ADP : les médias au service du pouvoir (Silencing Democracy: Media Blackout on the ADP Privatization Referendum)”. In: *Le Média* (Aug. 1, 2019).

[M4] T. Kouamou and **L. Gautheron**. “Élections européennes : un vote de classe avant tout (European Elections: It’s Always About Class!)” In: *Le Média* (June 4, 2019).

[M5] **L. Gautheron**. “Des chiffres pour appréhender l’anti-Mélenchonisme de la presse”. In: *Marianne* (Dec. 1, 2017).

Programming

2020 **LongFoRMer**, A python package for managing and exploiting longform recordings and their annotations, <https://github.com/LAAC-LSCP/ChildProject>
On-going

Jul 2013 **Back-end developer**, *Électricité réseau Distribution de France (ErDF)*, Annecy
Automated retrieval of large amounts of data from other company-wide applications.

2011 **Volunteer**, *AssaultCube*

2014 Development of a C++ 3D video game as part of an international team of volunteers.

Skills & interests

Programming Python (expert), and C, C++, Fortran & Arduino (proficient); Stan, PyTorch; Pandas, SQL, HDF; PHP, HTML, JS

Languages French (native), English (fluent/C2); Spanish (beginner)

Interests Energy transition; climate change and the polycrisis; microcontroller programming