

William Gaudelier

PhD in Computer Science

Paris
France

+33 6 46 64 57 98

✉ william.gaudelier@gmail.com



Research interests

I wish to apply my skills in logic to foster the development of **AGI**. I am interested in **code generation**, **explainable AI**, and **automated theorem proving**, particularly in relation to **Natural Language Processing**.

Academic curriculum

- 2021–2024 **PhD in computer science**, *Université Paris-Est Créteil in Laboratoire d'Algorithmique, Complexité et Logique (LACL)*
Computable analysis of Ramsey-type theorems.
Advised by Julien Cervelle and Ludovic Levy Patey
- 2018–2021 **Master in Mathematical Logic and Foundations of Computer Science (LMFI)**, *Université Paris-Cité (formerly Paris-Diderot VII)*, mention Très Bien
- 2017–2018 **Joint bachelors, mathematics and computer science**, *Université Paris-Saclay (formerly Paris-Sud XI)*, mention Bien
- 2014–2017 **Classe préparatoire aux grandes écoles (CPGE), MPSI/MP***, *Lycée Claude Fauriel*
- 2014 **Scientific Baccalauréat**, *Lycée Étienne Mimarid*, mention Bien

Publications

- 2024 **Cross-constraint basis theorems and products of partitions**, *submitted*
Julien Cervelle, William Gaudelier, and Ludovic Levy Patey.
- 2022 **The reverse mathematics of CAC for trees**, *The Journal of Symbolic Logic (to appear)*
Julien Cervelle, William Gaudelier, and Ludovic Patey.

Computer skills

- General C, C++, Coq, OCaml, Prolog, Python, R
- AI & Data Keras, numpy, pandas, PyTorch, Scikit-learn, TensorFlow
- Documents \LaTeX , Office (Word, Excel, VBA), Git
- Web/UI HTML, CSS, PHP, SQL, Javascript

Summer schools

- June 2024 **Machine Learning and Advanced Statistics Summer School**, *Universidad Politécnica de Madrid*, 2×15 hours
 - Feature Subset Selection (Bojan Mihaljević, Pedro Larrañaga, Concha Bielza)
 - Explainable Machine Learning (Bojan Mihaljević, Enrique Valero-Leal)
- June 2024 **Deep Learning and Computer Vision Summer School**, *Università di Genova*, 2×15 hours
 - General introduction with lab sessions and group projects
 - Deep learning (Nicoletta Noceti)
 - Computer vision (Francesca Odone)

- June – July 2023 **Graduate Summer School in Logic**, *Institute for Mathematical Sciences and the National University of Singapore*, 3×15 hours
- Exotic models, Ultimate L, and the Ultrapower Axiom (W. Hugh Woodin)
 - Recursion Theoretic Degree Structures and Borel Equivalence Relations (Theodore Slaman)
 - Model theory of asymptotic differential algebra (Joris van der Hoeven)

Teaching experiences

- Spring 2024 **Concurrent and event-driven programming**, *lab sessions*, 2nd year BSc CS
Events and handlers, TinyPad in WoW, and MVC architecture
- Spring 2023 **Combinatorics and Graphs**, *lab sessions*, 2nd year BSc CS
& 2024 Sets, relations and orders. Basic techniques and results in combinatorics and graph theory
- Spring 2023 **Formal languages and automata**, *lab sessions*, 2nd year BSc CS
& 2024 Regular expressions and finite automata
- Fall 2022 **Functional programming**, *lab sessions*, 2nd year BSc CS
& 2023 Introduction to OCaml programming.
- Spring 2022 **Web development**, *lab sessions*, 1st year BUT
Introduction to PHP, SQL, and MVC architecture
- Fall 2021 **Web interfaces**, *lecture courses and lab sessions*, 1st year BUT
Introduction to HTML, CSS, and JavaScript

Scientific responsibilities

- 2022 & 2023 **Co-organizer of “Bourbakettes”**, *Université Paris-Cité*
Weekly seminar of the PhD students at IMJ-PRG (Sophie Germain building)

Meetings (Conferences, Workshops, Seminars, ...)

Future events

- Nov. 2024 **Journées Synthèse de Programmes**, *Bordeaux, France*
- Nov. 2024 **11th French-Israeli Workshop on Foundation of Computer Science**, *Paris, France*

Presentations

- Sept. 2024 **Séminaire LACL**, *Université Paris-Est Créteil*
Mathématiques à rebours et théorèmes de type Ramsey
- June 2024 **Journée Recherche**, *IUT de Sénart-Fontainebleau*
Calculabilité, mathématiques à rebours, et théorème de Ramsey
- Jan. 2024 **Séminaire des Thésards**, *Institut de Mathématiques de Jussieu-Paris Rive Gauche*
The reverse mathematics of some Ramsey-type theorems

Attendance

- May 2023 **Logique à Paris**, *Paris, France*
- June 2022 **Workshop on Reverse Mathematics and its Philosophy**, *Paris, France*
- March 2022 **New directions in computability theory**, *Luminy, France*
- Nov. 2021 **Journées du Groupe de Travail Calculabilités**, *Nice, France*
- Oct. 2021 **40th Weak Arithmetics Days**, *Athens, Greece*

Languages

- French Mother tongue
- English Fluent (C1), TOEFL iBT : 102/120, TOEIC : 955/990
- German Basic (B1)