Frédéric A. Hayek, Ph. D. Candidate

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Employment History

2025 – now	🔖	**Lecturer – Researcher.** TechInsight.
2021 – now	🔖	**Ph. D. Researcher.** LIMOS, University Clermont Auvergne.
2024	🔖	**Lecturer.** Cyber Management School.
2023 – 2024	🔖	**Lecturer.** Hesias University.
	🔖	**Wood Coding Workshops.** Code en Bois.
2021 – 2024	🔖	**Lecturer and Assistant Lecturer.** University Clermont Auvergne.
2019 – 2021	🔖	**Tutor.** University Grenoble Alps.
2016	🔖	**Promoter of the IGLUS project.** EPFL, Switzerland. Innovative Governance of Large Urban Systems. In charge of the Middle-East.

Education

2021 – now	🔖	**Ph. D. Computer Science.** University Clermont Auvergne. Thesis title: *Security Analysis of Distributed Ledgers.* Advisor: *Pascal Lafourcade*, Co-Monitor: *Ariane Tichit*.
2020 – 2021	🔖	**M. Sc. Cybersecurity.** University Grenoble Alps.
2019 – 2021	🔖	**M. Eng. Information Systems Engineering.** Grenoble INP – Ensimag.
2016 – 2019	🔖	**B. Sc. Mathematics and Computer Science.** University Grenoble Alps. With an exchange 3rd year at University of British Columbia, Canada.
2015 – 2016	🔖	**Special Mathematics Course.** EPFL, Lausanne, Switzerland.

Research Publication

BRAINS 2023	🔖	**Generic and Universal Local Cryptocurrency: LCoin** Frederic A. Hayek, Pascal Lafourcade, Ariane Tichit.
SECRYPT 2023	🔖	**Generic Blockchain on Generic Human Behavior** Clémentine Gritti, Frederic A. Hayek, Pascal Lafourcade.
SAC 2023	🔖	**Generic Privacy Preserving Private Permissioned Blockchains** Frederic A. Hayek, Mirko Koscina, Pascal Lafourcade, Charles Olivier-Anclin.

Learning Apprenticeships

2021 – now **Ph. D. Trainings.** Université Clermont Auvergne.
Project management (Agile); Marketing; Negotiation; Intellectual property; Communicating science to the media...

2022 **Cyber in Nancy Summerschool.** LORIA, Nancy.
Formal methods, cryptanalysis, fuzzing, electronic voting, Side-channel attacks.

2021 **Research Internship.** LIMOS, University Clermont Auvergne.
Project: *Design and Analysis of an eco-friendly cryptocurrency: EcoMobiCoin.*
Mentors: *Pascal Lafourcade.*

2020 **Research Internship.** Wire - Zeta Project, Berlin, Germany.
Project: *Preventing Malicious Updates in Messaging Layer Security (MLS).*
Mentors: *Franziskus Kiefer, Raphaël Robert.*

Academic Research Project. Grenoble INP – Ensimag.
Project: *Shortest Transformations Between k-Colourings.*
Mentor: *Moritz Mühlenthaler.*

2019 **MATHINFOLY Summerschool.** University of Lyon.
Crash-course in cryptography, logic, and proof verification in COQ.

Industry Internship. ProcSim, Lausanne, Switzerland.
Project: *Machine Learning for quality control.*
Mentor: *Roxanne Tison.*

2018 **Student Internship.** VERIMAG.
Project: *Detection of software vulnerabilities by reverse-engineering ARM assembly code.*
Mentors: *Laurent Mounier, Roland Groz.*

2017 **Student Internship.** Grenoble Laboratory of Informatics.
Project: *Introduction to Machine Learning.*
Mentor: *Simon Moura.*

Skills

Languages C2: French, English, Arabic (Lebanese).

B1: German (Swiss-German).

A2: Italian.

A1: American Sign Language.

Coding Proficient in: python, C.

Familiar with: Java, OCaml, R, Bash, ARM Assembly, Haskell, Prolog, COQ, Rust, HTML, CSS, UML, SQL, LaTeX, Git, SageMath, Matlab, Octave, Sci-Lab, OpenSSL, *etc.*

Miscellaneous

2021 – 2025 **Various Leadership Roles.** Doct'Auvergne.

2021 – 2024 **Elected Ph. D. Representative at the College of Doctoral Schools Council.**

2021 – 2023 **Elected Ph. D. Representative at the Doctoral School Council.**

2019 – 2021 **President.** Grenoble INP Magic Club.

2024 **Other Interests.**
Card magic, martial arts, latin dances, guitar, hiking, reading, cooking.

Conference Organization

PdlR 2024	🔖 **General Committee & Session Chair.**
SOICT 2024	🔖 **Program Committee.**
RESSI 2024	🔖 **Program Committee.**
STACS 2024	🔖 **Local Committee.**
PdlR 2023	🔖 **General Committee & Session Chair.**
SOICT 2023	🔖 **Program Committee.**

Seminar Organization

2024	🔖 **LIMOS Doctoral Seminar.** Monthly.
2022	🔖 **Annual Doctoral School Seminars.**

Scientific Talks

2024	🔖 **Mathematics' Week Seminar.** Topic: Generic Blockchain on Generic Human Behavior.
	🔖 **LMBP Doctoral Seminar.** Topic: Generic and Universal Local Cryptocurrency: LCoin.
2023	🔖 **Mathematics' Week Seminar.** Topic: Primecoin.
2022	🔖 **Network & Security Seminar.** Topic: Generic Privacy Preserving Private Permissioned Blockchains.

Popular Science

2024	🔖 **Teaching Detainees in Prison.** Albin.
2022 – 2025	🔖 **Radio Show:** *Moteur de Recherche*. Doct'Auvergne & Radio Campus.
2022 – 2024	🔖 **Monthly Research Poster:** *Doct'du Mois*. Doct'Auvergne.
2024	🔖 **Puy de la Recherche.** Topic: Attacking the CIA: Confidentiality; Integrity; Authenticity.
	🔖 **My Thesis in 180 Seconds. (French)**
	🔖 **ÉloquenSciences.** Les Maths en Scène. Scientific supervisor.
2023	🔖 **Puy de la Recherche.** Topic: The Origin of Monetary Value.
	🔖 **Science Festival.** Workshop in computational thinking : Wood Coding.
	🔖 **Pint of Science.** Topic: Digital Networks.
	🔖 **Cybersecurity Breakfasts.** Topic: Blockchains or how to scale organised anarchy.
	🔖 **Exchange High School – Ph. D.**

Teaching

2024 – 2025
- **M2 : Dark Web & Cryptocurrencies.** Cyber Management School.
  In charge of the whole course.
- **M2 : Cybersécurity & Blockchain.** Cyber Management School.
  In charge of the whole course.
- **B2 : Arithmetic & Cryptography.** Cyber Management School.
  En charge de la matière.
- **B1 : Programming with Python.** Cyber Management School.
  In charge of the whole course.
- **M1 : Securiy Risk Management with EBIOS RM.** HESIAS.
  In charge of the whole course.
- **B3 : Algorithmics 3.** HESIAS.
  In charge of the whole course.
- **B2 : Algorithmics 2.** HESIAS.
  In charge of the whole course.

2023 – 2025
- **L1: Algorithmics 1.** HESIAS University.
  In charge of the whole course.

2022 – 2025
- **Prepa 2: Advanced Algorithmics.** Clermont Auvergne INP.
  In charge of the whole course.

2024
- **BUT3 : Introduction to Cybersecurity.** IUT Clermont Auvergne (Moulins).
  In charge of the whole course.

2023 – 2024
- **BUT 1: Introduction to Databases.** IUT Clermont Auvergne.
- **BUT 1: Project Instructor: Data processing.** IUT Clermont Auvergne.
- **BUT 2: Project Instructor: Java.** IUT Clermont Auvergne.

2022 – 2023
- **BUT 2: Cryptography & Security.** IUT Clermont Auvergne.
- **Prepa 2: Graphs & Trees.** Clermont Auvergne INP.
  In charge of the whole course.

2021 – 2022
- **L1: Mathematical Tools 2.** University Clermont Auvergne.
- **L1: C Programming.** University Clermont Auvergne.
- **M1: Network & Security.** University Clermont Auvergne.

2019 – 2021
- **L1: All Mathematics & Computer Science courses.** University Grenoble Alps.
  Tutorials (remedial).
- **L0: All Mathematics & Computer Science courses.** University Grenoble Alps.
  Tutorials (remedial).