

# Simon Mirwasser

PhD Student

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## ACADEMIC EXPERIENCE

- 2022–now **PhD candidate**, *LIPN, Université Paris 13, Villetaneuse*,  
Index linear logic by differential operators.  
Directed by Marie Kerjean and Stefano Guerrini
- 2021–2022 **9 months Research Internship**, *University of Edinburgh, Scotland*,  
Quantitative semantics and learning.  
Supervised by Glynn Winskel and Chris Heunen
- 2021 **5 months Research Internship**, *LIPN, Villetaneuse*,  
Categorical models of an indexed differential linear logic.  
Supervised by Marie Kerjean and Flavien Breuvert
- 2020 **5 months Research Internship**, *LSV, Cachan*,  
A category of implicative algebras.  
Supervised by Valentin Blot, Alexandre Miquel (IMERL, Uruguay) and Etienne Miquey
- 2019 **1<sup>1/2</sup> months Research Internship**, *LIFO, Orléans*,  
Transitivity and Minimality of Turing Machines.  
Supervised by Nicolas Ollinger

## EDUCATION

- 2020-2021 **Master 2 of Computer Science**, *ENS Paris-Saclay*,  
Parisian Master of Research in Computer Science (MPRI).
- 2019-2020 **Master 1 of Computer Science**, *ENS Paris-Saclay*,  
Parisian Master of Research in Computer Science (MPRI).
- 2018–2019 **Bachelor of Mathematics**, *ENS Paris-saclay*.
- 2018–2019 **Bachelor of Computer Science**, *ENS Paris-saclay*.

## PUBLICATIONS

### ■ CONFERENCE PAPER

**Unifying graded linear logic and differential operators**, *FSCD 2023*,  
with Flavien Breuvert and Marie Kerjean.  
<https://doi.org/10.4230/LIPIcs.FSCD.2023.21>

### ■ PREPRINTS

**Double indexed differential linear logic reconciling resources and differential operators**, with Marie Kerjean, Submitted in 2025.  
<https://lipn.univ-paris13.fr/~mirwasser/papers/didill.pdf>

**Unifying graded linear logic and differential operators (long version)**,  
with Flavien Breuvert and Marie Kerjean, Submitted in 2024.  
<https://arxiv.org/abs/2402.09138>

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## TALKS

- Apr. 2025 **Double indexed differential linear logic reconciling resources and differential operators**, *LPD & LSC seminar*.  
Marseille, France
- Nov. 2024 **Graded differential linear logic : can we go higher-order ?**, *GT Scalp*.  
Lille, France
- Jun. 2024 **Indexed differential linear logic and Laplace transform**, *GT LHC*.  
Nantes, France
- Jul. 2023 **Unifying graded linear logic and differential operators**, *FSCD*.  
Roma, Italy
- Jul. 2023 **Unifying graded linear logic and differential operators**, *TLLA*.  
Roma, Italy

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## TEACHING

- 2024–2025
  - Unix**, *Bachelor 1st year*, Practical classes, 30h.  
Université Sorbonne Paris Nord
  - Algebraic specification**, *Bachelor 2nd year*, Tutorial classes, 13h.  
Université Sorbonne Paris Nord
  - Web development**, *Bachelor 1st year*, Practical classes, 21h.  
Université Sorbonne Paris Nord
- 2023–2024
  - Programming in C**, *Bachelor 1st year*, Practical classes, 27h.  
Université Sorbonne Paris Nord
  - Logic**, *Bachelor 1st year*, Tutorial classes, 18h.  
Université Sorbonne Paris Nord
  - Web development**, *Bachelor 1st year*, Practical classes, 21h.  
Université Sorbonne Paris Nord
- 2022–2023
  - Data bases**, *Bachelor 3rd year*, Practical classes, 20h.  
Université Sorbonne Paris Nord
  - Logic**, *Bachelor 1st year*, Tutorial classes, 18h.  
Université Sorbonne Paris Nord
  - Principles of programming**, *Bachelor 3rd year*, Practical and classes, 25h.  
Université Sorbonne Paris Nord
  - Programming in C**, *Bachelor 1st year*, Practical classes, 9h.  
Université Sorbonne Paris Nord

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## COMMUNITY SERVICE

- 2023–2024 **Member of the research committee of Université Sorbonne Paris Nord, Elected as a PhD representative.**  
Reviewing of grant applications for research events, participation to discussions on the research life of the university.
- 2023 **Subreview for MFPS, International Conference on Mathematical Foundations of Programming Semantics.**
- 2023 **Organization of the team seminar.**  
I helped organizing a 3 days seminar for the LoVe team of the LIPN.

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## RESEARCH EVENTS

- 2025 **Complexity as a kaleidoscope, Marseille, France.**  
A one-week school on complexity theory.
- 2024 **Differential  $\lambda$ -calculus and differential linear logic, 20 years later, Marseille, France.**  
A one-week conference.
- 2023 **Formal structures for computation and deduction, Roma, Italy.**  
Attendance and participation to this international conference.
- 2023 **Foundations of Programming and Software Systems, Bertinoro, Italy.**  
A one-week school on quantitative aspects of program semantics, verification and transformation.
- From 2022 **Regular attendance to workshops of my research community.**  
Chocola, GT Scalp (2023, 2024), GT LHC (2022, 2024).

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## SKILLS

- Languages French (Native speaker), English (Good command C1 (CAE)), Spanish (Basic)
- Programmation Python, Caml, Assembly, Coq
- Others  $\text{\LaTeX}$ , Linux