

# Isa Vialard



He/him



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<https://isavialard.github.io/home/>

## Education

- 2021 – 2024  **Ph.D. at LMF, ENS Paris-Saclay**, Gif-sur-Yvette  
Thesis title: *Measuring Well Quasi-Orders and the complexity of verification*,  
under supervision of Philippe Schnoebelen
- 2020 – 2021  **Master Parisien de Recherche en Informatique**, Paris.
- 2017 – 2021  **École Polytechnique**, Palaiseau.

## Experiences

- 2024-2025  **Postdoctoral researcher at the Max Plank Institute for Software Systems, in the Foundations of Algorithmic Verification group led by Joël Ouaknine.**  
Topic : *Weighted Timed Games*.
- 2021  **Research internship with Philippe Schnoebelen**, ENS Paris-Saclay  
Topic: *Measuring the width of Cartesian product of Well Quasi-Orders*.
- 2020  **Research internship with Patrick Totzke**, Liverpool University  
Topic: *(Bi-)Simulation between Gap-order Constraint Systems*.
- 2019  **Internship at AdaCore with Yannick Moy**, Paris  
Topic: *Ada/Spark binding for C crypto libraries TweetNaCl and Libsodium*.

## Publications

### Journal articles

- MSCS  S. Abriola, S. Halfon, A. Lopez, S. Schmitz, P. Schnoebelen, and I. Vialard, *Measuring well quasi-ordered finitary powersets*, Accepted for publication in *Mathematical Structures in Computer Science*. url: <https://arxiv.org/abs/2312.14587>
- Order  I. Vialard, *On the width of the cartesian product of ordinals*, *Order*, vol. 42, pp. 37–58, Apr. 2024. doi: 10.1007/s11083-024-09668-8.
- Acta Informatica  Ph. Schnoebelen and I. Vialard, *On the piecewise complexity of words*, *Acta Informatica*, vol. 62, 2025, 22 pages. doi: 10.1007/s00236-025-00480-4.
- Logic Journal of the IGPL  I. Vialard, *On maximal order type of the lexicographic product*, *Logic Journal of the IGPL*, Volume 33, Issue 4, August 2025, 10 pages. <https://doi.org/10.1093/jigpal/jzaf051>.

### Conference proceedings

- FOSSACS 2026  Q. Guilmant, J. Ouaknine, and I. Vialard, *Undecidability of the value problem for 2-clock weighted timed games*, **distinguished paper** at FOSSACS 2026.
- CSL 2026  I. Vialard, *Deciding the Value of Two-Clock Almost Non-Zeno Weighted Timed Games*, accepted at CSL 2026.

## Publications (continued)

- AAAI 2026  R. Aghamov, C. Baier, J. Ouaknine, J. Piribauer, M. Vahanwala, I. Vialard, *Temporal Properties of Conditional Independence in Dynamic Bayesian Networks*, accepted at AAAI 2026.
- ICALP 2025  Ph. Schnoebelen, J. Veron, and I. Vialard, *A tropical approach to the compositional piecewise complexity of words and compressed words*, in ICALP 2025
- SOFSEM 2024  M. Praveen, P. Schnoebelen, J. Veron, and I. Vialard, *On the piecewise complexity of words and periodic words*, in SOFSEM 2024: Theory and Practice of Computer Science, LNCS, 2024, pp. 456–470. doi: 10.1007/978-3-031-52113-3\_32.
- MFCS 2023  I. Vialard, *Ordinal measures of the set of finite multisets*, in Mathematical Foundations of Computer Science (MFCS 2023), LIPIcs. doi: 10.4230/LIPIcs.MFCS.2023.87.

## In preparation

-  M. Blondin, M. Cadilhac, B. Courchesne, L. Guillou, C. Mascle, I. Vialard, *Population Protocols over Ordered Agents*, submitted for publication.

## Scientific talks

### Conference talks

- CSL 2026  **EACSL Annual Conference on Computer Science Logic**, Paris 2026.  
Title: *Deciding the Value of Two-Clock Almost Non-Zeno Weighted Timed Games*.
- Highlights 2025  **Highlights of Logic, Games and Automata**, Saarbrücken 2025.
- ICALP 2025  **International Colloquium on Automata, Languages, and Programming**, Aarhus 2025.  
Title: *A tropical approach to the compositional piecewise complexity of words and compressed words*
- MFCS 2023  **International Symposium on Mathematical Foundations of Computer Science**, Bordeaux 2023.  
Title: *Ordinal Measures of the Set of Finite Multisets*
- Highlights 2022  **Highlights of Logic, Games and Automata**, Paris 2022.

### Workshops

Logic and Mentoring Workshop **Paris** (2026). Highlights collaborative research week, **Saarbrücken** (2025). Autoboz research week, **Aahrus** (2025). Workshop *Words and Subwords*, **Liège** (2025). Workshop *WQO-BQO - what is up?*, **Lyon** (2023). Research school *Discrete mathematics and logic*, **Marseille**(2023).

### Invited seminars

Seminar 68NQRT of IRISA, **Rennes** (2025). Seminar MTV of LaBRI, **Bordeaux** (2025). Seminar Informel of LMF, **Paris-Saclay** (2025). MoVe Seminar of LIS, **Marseille** (2025). Automata Seminar of IRIF, **Paris** (2025). Journées annuelles du GT Verif, **Lille** (2024). Seminar LX of LaBRI, **Bordeaux** (2024). Automata Seminar of IRIF, **Paris** (2024). Journées annuelles du GT Verif, **Paris** (2023). Seminar at Liverpool University, **Liverpool** (2023).

## Teaching (for a total of 198h)

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- 2021 – 2024     **Formal Languages**, ENS Paris-Saclay L3.
- 2023 – 2024     **Logic Project (Introduction to Coq and Agda)**, ENS Paris-Saclay L3.
- 2022 – 2023     **Architecture and systems**, ENS Paris-Saclay L3.
- 2021 – 2022     **Rewriting theory**, ENS Paris-Saclay M1.

## Supervision

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- 2026     Supervising Baptiste Diedler during his internship on the subject of parameterized timed automata.
- 2025     Supervising Angel Wuttke during his internship on the subject of two-clock weighted timed games with negative weights.

## Skills

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- Languages     Fluent in French and English.
- Coding and proof assistants     CaML, Python, C, Coq, Agda, Why3.