

Aliaume LOPEZ

Academic Experience

- 2023 – 2025 **Post-Ph.D in Computer Science**, (*Under the supervision of Mikołaj Bojańczyk*), University of Warsaw
- 2019 – 2023 **Ph.D in Computer Science**, *First Order Preservation Theorems in Finite Model Theory: Locality, Topology and Limit Constructions* (Thèse soutenue le 12/09/2023), LMF, ENS Paris-Saclay, IRIF, Université Paris-Cité
- 2018 **Agrégation de Mathématiques**, *With Computer Science as a Minor* (Ranked 5th out of 320), École Normale Supérieure de Cachan
- 2017 – 2018 **Masters in Mathematics**, *Master de Formation à l'Enseignement Supérieur* (With high honours), École Normale Supérieure de Cachan
- 2016 – 2019 **Masters in Computer Science**, *Master Parisien de Recherche en Informatique* (With high honours), École Normale Supérieure de Cachan
- 2015 – 2016 **Bachelors in Computer Science**, (*With high honours*), École Normale Supérieure de Cachan
- 2015 – 2016 **Bachelors in Mathematics**, (*With high honours*), École Normale Supérieure de Cachan
- 2013 – 2015 **MPSI/MP***, *Intensive mathematics and physics courses* (With high honours), Lycée Joffre, Montpellier
- 2013 **Baccalauréat scientifique**, (*With high honours*), Lycée Georges Pompidou, Castelneau-le-Lez

Professional Experience

- 2025 – présent **Maître de Conférences en Informatique**, *Fonctionnaire* (Rattaché au LaBRI dans l'équipe LX), INP Bordeaux - ENSEIRB-MATMECA
- 2023 – 2025 **Postdoctoral Contract**, *Full time* (Under the supervision of Mikołaj Bojańczyk), University of Warsaw
- 2019 – 2023 **Ph.D in Computer Science with Teaching Duties**, *Full time* (Under the supervision of Jean Goubault-Larrecq and Sylvain Schmitz), École Normale Supérieure Paris-Saclay, Université Paris Cité
- 2020 – 2021 **Chargé d'Affaires - Fullstack Developer**, *Full time*, Direction Interministérielle du Numérique, Autorité de Sécurité Nucléaire

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- 2017 – 2019 **Khôlleur de mathématiques**, *Part time*, Institution Sainte Marie, Lycée Lakanal
- March 2017 – **Research internship**, *Full time (Under the supervision of Alex K. Simpson)*,
July 2017 University of Ljubljana, Slovenia
- June 2015 – **Research internship**, *Full time (Under the supervision of Dan R. Ghica)*,
July 2015 University of Birmingham, United Kingdom
- 2015 – 2019 **Normalien Élève**, *Fonctionnaire Stagiaire*, ENS Paris-Saclay

Teaching Experience

- 2025 – 2026 **130 hours**, *Maître de Conférences*, INP Bordeaux - ENSEIRB-MATMECA
- 2023 – 2024 **24 hours**, *Practical and/or Exercice Sessions*, University of Warsaw
- 2022 – 2023 **60 hours**, *Practical and/or Exercice Sessions*, Université Paris Cité
- 2021 – 2022 **60 hours**, *Practical and/or Exercice Sessions*, Université Paris Cité
- 2019 – 2020 **48 hours**, *Practical and/or Exercice Sessions*, École Normale Supérieure Paris-Saclay

Reports

- [DLP23] Gaëtan Douéneau-Tabot, Aliaume Lopez, and Laurent Prosperi. *Recrutement et emploi des docteurs dans les administrations publiques*. Oct. 2023. URL: <https://www.irif.fr/~alopez/ressources/docteurs-admin.pdf>.
- [Lop17] Aliaume Lopez. *Generic Operational Metatheory*. Soutenance de Stage. ENS Cachan, Aug. 30, 2017, p. 28. URL: <https://www.irif.fr/~alopez/ressources/publications/M1%202017/rapport.pdf>.

Talks

- [Lop25c] Aliaume Lopez. “Polyregular Model Checking”. M2F Seminar of LaBRI. M2F Seminar, LaBRI, Bordeaux, Sept. 30, 2025. URL: <https://www.labri.fr/agenda/m2fntv-aliaume-lopez-polyregular-model-checking>.
- [Lop25d] Aliaume Lopez. “Polyregular Model Checking”. Automata Seminar of IRIF. Automata Seminar, IRIF, Paris, June 13, 2025. URL: <https://www.irif.fr/seminaires/automates/index>.
- [Lop25e] Aliaume Lopez. “Well-quasi-ordered classes of graphs and bounded linear clique-width”. Seminar Automata Theory. University of Warsaw, Apr. 9, 2025. URL: <https://www.mimuw.edu.pl/en/seminars/talk/well-quasi-ordered-classes-of-graphs-and-bounded-linear-clique-width/>.
- [Lop25f] Aliaume Lopez. “Well-Quasi-Orders and Logic on Graphs”. FMT’25. École de physique des Houches, Apr. 29, 2025. URL: <https://fmt25.labri.fr/program.html>.
- [Lop24b] Aliaume Lopez. “Labelled Well Quasi Ordered Classes of Bounded Linear Clique-Width”. HIGHLIGHTS Workshop. LaBRI, Sept. 18, 2024.

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- [Lop24c] Aliaume Lopez. “Well-quasi-ordered classes of bounded (linear) clique-width: an automata based approach”. Algo Seminar. LIRMM, Nov. 7, 2024.
- [Lop24d] Aliaume Lopez. “Well-quasi-ordered classes of bounded (linear) clique-width: an automata based approach”. LX Seminar. LaBRI, Nov. 4, 2024.
- [Lop24e] Aliaume Lopez. “Which polynomials are computed by N-weighted automata?” LINKS Seminar. LINKS, Nov. 12, 2024.
- [Lop24f] Aliaume Lopez. “Which polynomials are computed by N-weighted automata?” MOVE Seminar. LIS, Nov. 8, 2024.
- [Lop23a] Aliaume Lopez. “Compositional Techniques for Preservation Theorems over Classes of Finite Structures”. BOREAL Seminar. LIRMM, Nov. 6, 2023. URL: <https://info-web.lirmm.fr/collorg/6d7169a1-7fef-4683-89a1-31752e376a5e>.
- [Lop23c] Aliaume Lopez. “Preservation theorems and locality of first order logic”. M2F Seminar. LaBRI, Mar. 2, 2023.
- [Lop23d] Aliaume Lopez. “The Łos-Tarski theorem and locality”. M2F Seminar. MIMUW, Oct. 18, 2023.
- [Lop23f] Aliaume Lopez. “Z-Polyregular functions”. MOVE Seminar. LIS, Dec. 7, 2023.
- [Lop22a] Aliaume Lopez. “Generic Noetherian Theorems - Defining Noetherian Topologies Through Iterations”. BRAVAS. ENS Paris-Saclay, Apr. 11, 2022.
- [Lop22b] Aliaume Lopez. “Locality and Preservation Theorems”. DAAL. Lille DAAL, Lille, 2022, Mar. 28, 2022.
- [LD22] Aliaume Lopez and Gaëtan Douéneau-Tabot. “Rejoindre l’administration publique avec un doctorat - Comment et pourquoi ?” Séminaire du Département Informatique. ENS Paris-Saclay, Nov. 29, 2022.
- [Lop21a] Aliaume Lopez. “Basic Operational Preorders for Algebraic Effects - With a pinch of non-determinism and probabilities”. PPS Seminar. IRIF, Dec. 17, 2021.
- [Lop21b] Aliaume Lopez. “Preservation theorems - At the crossroads of topology and logics”. ASV Seminar. Nov. 19, 2021.
- [Lop16] Aliaume Lopez. “Une syntaxe améliorée pour la description de circuits digitaux”. 2016. URL: <https://www.irif.fr/~alopez/ressources/publications/L3%202016/synth.pdf>.

Publications

- [Lop25a] Aliaume Lopez. “Commutative N-Rational Series of Polynomial Growth”. In: *42nd International Symposium on Theoretical Aspects of Computer Science (STACS 2025)*. Ed. by Olaf Beyersdorff, Michał Pilipczuk, Elaine Pimentel, and Nguyễn Kim Thăng. Vol. 327. Leibniz International Proceedings in Informatics (LIPIcs). Dagstuhl, Germany: Schloss Dagstuhl – Leibniz-Zentrum für Informatik, 2025, 67:1–67:16. ISBN: 978-3-95977-365-2. DOI: 10.4230/LIPIcs.STACS.2025.67. URL: <https://drops.dagstuhl.de/entities/document/10.4230/LIPIcs.STACS.2025.67>.

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- [Lop25b] Aliaume Lopez. “Labelled Well Quasi Ordered Classes of Bounded Linear Clique-Width”. In: *50th International Symposium on Mathematical Foundations of Computer Science (MFCS 2025)*. Ed. by Paweł Gawrychowski, Filip Mazowiecki, and Michał Skrzypczak. Vol. 345. Leibniz International Proceedings in Informatics (LIPIcs). Dagstuhl, Germany: Schloss Dagstuhl – Leibniz-Zentrum für Informatik, 2025, 70:1–70:17. ISBN: 978-3-95977-388-1. DOI: 10.4230/LIPIcs.MFCS.2025.70. URL: <https://drops.dagstuhl.de/entities/document/10.4230/LIPIcs.MFCS.2025.70>.
- [LS25] Aliaume Lopez and Rafał Stefański. “Polyregular Model Checking”. In: *Computer Aided Verification (CAV 2025)*. Ed. by Ruzica Piskac and Zvonimir Rakamarić. Springer Nature Switzerland, Mar. 24, 2025, pp. 3–25. ISBN: 978-3-031-98682-6. DOI: 10.1007/978-3-031-98682-6_1. arXiv: 2503.18514 [cs.FL]. URL: <https://arxiv.org/abs/2503.18514>.
- [CDL23] Thomas Colcombet, Gaëtan Douéneau-Tabot, and Aliaume Lopez. “ \mathbb{Z} -polyregular functions”. In: *38th Annual ACM/IEEE Symposium on Logic in Computer Science (LICS)*. Los Alamitos, CA, USA: IEEE Computer Society, June 2023, pp. 1–13. DOI: 10.1109/LICS56636.2023.10175685. URL: <https://doi.ieeecomputersociety.org/10.1109/LICS56636.2023.10175685>.
- [Lop23b] Aliaume Lopez. “Fixed Points and Noetherian Topologies”. In: *Foundations of Software Science and Computation Structures*. Ed. by Orna Kupferman and Paweł Sobocinski. Vol. 13992. Springer Nature Switzerland, 2023, pp. 456–476. ISBN: 978-3-031-30829-1. DOI: 10.1007/978-3-031-30829-1_22. URL: https://link.springer.com/chapter/10.1007/978-3-031-30829-1_22.
- [Lop22c] Aliaume Lopez. “When Locality Meets Preservation”. In: *37th Annual ACM/IEEE Symposium on Logic in Computer Science*. LICS ’22. New York, NY, USA: Association for Computing Machinery, Aug. 2, 2022, pp. 1–14. ISBN: 978-1-4503-9351-5. DOI: 10.1145/3531130.3532498. URL: <https://doi.org/10.1145/3531130.3532498> (visited on 10/17/2022).
- [Lop21c] Aliaume Lopez. “Preservation Theorems Through the Lens of Topology”. In: *30th EACSL Annual Conference on Computer Science Logic (CSL 2021)*. Vol. 183. Leibniz International Proceedings in Informatics. 2021, 32:1–32:17. DOI: 10.4230/LIPIcs.CSL.2021.32.
- [LS18] Aliaume Lopez and Alex Simpson. “Basic Operational Preorders for Algebraic Effects in General, and for Combined Probability and Nondeterminism in Particular”. In: *27th EACSL Annual Conference on Computer Science Logic (CSL 2018)*. Ed. by Dan Ghica and Achim Jung. Vol. 119. Leibniz International Proceedings in Informatics (LIPIcs). Dagstuhl, Germany: Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik, Sept. 7, 2018, 29:1–29:17. ISBN: 978-3-95977-088-0. DOI: 10.4230/LIPIcs.CSL.2018.29. URL: <http://drops.dagstuhl.de/opus/volltexte/2018/9696> (visited on 10/17/2022).

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- [GJL17] Dan R. Ghica, Achim Jung, and Aliaume Lopez. “Diagrammatic Semantics for Digital Circuits”. In: *26th EACSL Annual Conference on Computer Science Logic (CSL 2017)*. Ed. by Valentin Goranko and Mads Dam. Vol. 82. Leibniz International Proceedings in Informatics (LIPIcs). Dagstuhl, Germany: Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik, 2017, 24:1–24:16. ISBN: 978-3-95977-045-3. DOI: 10.4230/LIPIcs.CSL.2017.24. URL: <http://drops.dagstuhl.de/opus/volltexte/2017/7671> (visited on 10/17/2022).
- [GL17] Dan R. Ghica and Aliaume Lopez. “A structural and nominal syntax for diagrams”. In: *Proceedings 14th International Conference on Quantum Physics and Logic, QPL 2017, Nijmegen, The Netherlands, 3-7 July 2017*. Ed. by Bob Coecke and Aleks Kissinger. Vol. 266. EPTCS. 2017, pp. 71–83. DOI: 10.4204/EPTCS.266.4. URL: <https://doi.org/10.4204/EPTCS.266.4>.

Unpublished Documents

- [Boj+25] Mikołaj Bojańczyk, Aliaume Lopez, Rafał Stefański, and Omid Yaghoubi. *Regularity as seen by Alice and Bob*. 2025. URL: <https://github.com/bojanczyk/bob-alice>.
- [GL25] Arka Ghosh and Aliaume Lopez. *Computability of Equivariant Gröbner bases*. 2025. arXiv: 2507.08990 [cs.LG]. URL: <https://arxiv.org/abs/2507.08990>.
- [LLS24] Nathan Lhote, Aliaume Lopez, and Lia Schütze. *Well-quasi-orderings on word languages*. 2024. URL: <https://github.com/AliaumeL/word-ordering-wqo>.
- [Lop24a] Aliaume Lopez. *\mathbb{N} -polyregular functions arise from well-quasi-orderings*. 2024. arXiv: 2409.07882v1.
- [Abr+23] Sergio Abriola, Simon Halfon, Aliaume Lopez, Sylvain Schmitz, Philippe Schnoebelen, and Isa Vialard. *Measuring well quasi-ordered finitary powersets*. 2023.
- [GL20] Jean Goubault-Larrecq and Aliaume Lopez. *On the word topology, and beyond*. Non-Hausdorff Topology and Domain Theory. 2020. URL: https://projects.lsv.ens-cachan.fr/topology/?page_id=2735.

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