Benjamin Jauregui

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Summary

PhD student in Mathematics (at Université Paris Cité – University of Chile, via a cotutelle agreement) with a strong background in modern computational models and mathematics. My research focuses on understanding the locality of problems in modern computational models, such as distributed, quantum, and online algorithms for discrete problems, combining theoretical foundations with practical problem-solving approaches. Passionate about scalable computation, continuous learning, and inclusive collaboration.

Education

PhD in Mathematics and Computer Science *IRIF, Université Paris Cité* **Paris, France** *2024–present*

Advisor: *Pierre Fraigniaud*

PhD in Applied Mathematics *Universidad de Chile* **Santiago, Chile** *2024–present*

Advisors: *Pedro Montealegre and Iván Rapaport*

Master in Applied Mathematics *Universidad de Chile* **Santiago, Chile** *2021–2022*

Advisors: *Pedro Montealegre and Iván Rapaport*

Mathematical Engineering (Applied Mathematics) *Universidad de Chile* **Santiago, Chile** *2016–2021*

Research Visits

LIFO, visiting Ioan Todinca *Université d'Orléans* **Orléans, France** *October 2024*

IMDEA Networks, visiting Antonio Fernandez *IMDEA Networks* **Madrid, Spain** *November 2024*

Publications

4.1 Conferences

- Jauregui, B., Montealegre, P., & Rapaport, I. (2025). Deterministic Distributed DFS via Cycle Separators in Planar Graphs. In Proceedings of the ACM Symposium on Principles of Distributed Computing (PODC 2025). [arxiv version]
- Jauregui, B., Montealegre, P., & Rapaport, I. (2022). Distributed interactive proofs for the recognition of some geometric intersection graph classes. In Proceedings of the 31st International Colloquium on Structural Information and Communication Complexity (SIROCCO 2022). [arxiv version]

4.2 Journal

- Jauregui, B., Montealegre, P., Ramirez-Romero, D., Rapaport, Iván.Compact distributed certification of geometric graph classes,Journal of Computer and System Sciences,Volume 154,2025,103661,ISSN 0022-0000. [journal version]

4.3 Preprint

- Jauregui, B., Li, J., Montealegre, P. & Todinca, I. (2025). Distributed treewidth computation and Courcelle's theorem in the CONGEST model. [arxiv version]

Skills

Language Spanish (native), English (advanced), French (basic)