

Romain Bourneuf

Master 2 student at ENS de Lyon.

✉ romain.bourneuf@ens-lyon.fr ☎ +33 6 80 17 92 61

🌐 My Website 📄 The latest version of my CV



Education

📅 2021 – 2023

Master's Degree in Computer Science (ENS de Lyon, France)

Fundamental Computer Science

Graph Decompositions, Combinatorics, Geometric Graphs, WQOs, Polynomials in Combinatorics, Graph Theory, Distributed Algorithms, Optimization & Approximation, Algebra, Number Theory.

Graduated with highest honors, ranked first.

📅 2020 – 2021

Bachelor's Degree in Computer Science (ENS de Lyon, France)

Fundamental Computer Science

Algorithmics, Probability, Algebra, Logic, Programming, Topology, Complexity.

Graduated with highest honors, ranked first.

📅 2018 – 2020

Scientific Preparatory Class MPSI and MP* (Rennes, France)

Mathematics, Physics, Computer Science.

Research Internships

📅 February 2024 – July 2024

Structural and Algorithmic Properties of Hereditary Graph Classes.

Supervision: Under Marcin Pilipczuk, University of Warsaw, Warsaw.

About: Understanding structural properties of hereditary graph classes and using them to build efficient algorithms.

📅 September 2023 – February 2024

Decomposing graphs into 4-connected components.

Supervision: Under Johannes Carmesin, University of Birmingham, Birmingham.

About: Studying the decomposition of graphs into 4-connected components, both structurally and algorithmically.

📅 February 2023 – July 2023

Polynomial χ -Boundedness of Graphs of Bounded Twin-Width.

Supervision: Under Stéphan Thomassé, ENS de Lyon, Lyon.

About: Studying various properties of structures of bounded twin-width, with a focus on the connection between the clique number and the chromatic number of such graphs.

📅 Summer 2022, 4 months

TFNP and Extremal Combinatorics.

Supervision: Under Alon Rosen, Bocconi University, Milan.

About: Understanding the complexity of search problems related to extremal combinatorics.

📅 Summer 2021, 6 weeks

Brandes' Algorithm for Betweenness Centrality in a Graph.

Supervision: Under Marthe Bonamy, LaBRI, Bordeaux.

About: Looking for fast algorithms to calculate betweenness centrality in various classes of graphs.

Research Publications

5. **On polynomial degree-boundedness**, with Matija Bucić, Linda Cook and James Davies, preprint.
<https://arxiv.org/abs/2311.03341>
4. **Factoring Pattern-Free Permutations into Separable ones**, with Édouard Bonnet, Colin Geniet and Stéphan Thomassé, **SODA 2024**.
<https://arxiv.org/abs/2308.02981>
3. **A tamed family of triangle-free graphs with unbounded chromatic number**, with Édouard Bonnet, Julien Duron, Colin Geniet, Stéphan Thomassé and Nicolas Trotignon, preprint.
<https://arxiv.org/abs/2304.04296>
2. **Bounded twin-width graphs are polynomially χ -bounded**, with Stéphan Thomassé, preprint.
<https://arxiv.org/abs/2303.11231>
1. **PPP-Completeness and Extremal Combinatorics**, with Lukáš Folwarczny, Pavel Hubáček, Alon Rosen and Nikolaj Ignatieff Schwartzbach, **ITCS 2023**.
<https://arxiv.org/abs/2209.04827>

Conferences & Workshops

Conferences

- Innovations in Theoretical Computer Science, ITCS 2023, MIT.
PPP-Completeness and Extremal Combinatorics.


Workshops as a speaker

- 3rd Workshop on Complexity and Algorithms, CoA 2023, Paris.
PPP-Completeness and Extremal Combinatorics.
- FPT Fest in the honour of Mike Fellows, Bergen, 2023.
Bounded twin-width graphs are polynomially χ -bounded.
- 1st workshop on twin-width, Aussois, 2023.
Bounded twin-width graphs are polynomially χ -bounded.

Workshops as a non-speaker

- Sparse Graphs Coalition 2024 Session 1, Online, 2024.
- Structural Graph Theory Workshop, Będlewo, 2023.
- Structural Graph Theory Bootcamp, Warsaw, 2023.
- Digraphs meeting, Sète, 2023.
- Milan Theory Workshop, Bocconi, 2022.

Reviewing activities

-  Reviewer for JCTB (x2).

References

Marthe Bonamy

CNRS Researcher

LaBRI,

Bordeaux, France.

(Preferably by email)

✉ marthe.bonamy@u-bordeaux.fr

🌐 Marthe's personal page

Stéphan Thomassé

Professor

ENS de Lyon,

Lyon, France.

(Preferably by phone)

✉ stephan.thomasse@ens-lyon.fr

🌐 Stéphan's personal page