Loïc Dubois

Curriculum vitae

Université Gustave Eiffel, France
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Research interests

Algorithms, Data Structures, and Computational Geometry. In particular graphs on surfaces, and computational aspects of discrete, hyperbolic, and piecewise-flat surfaces.

Education

I was a paid civil servant at École Normale Supérieure de Lyon.

2022-now	**PhD candidate** at Université Gustave Eiffel, advised by Éric Colin de Verdière and Vincent Despré.
2021-2022	**Diploma** of École Normale Supérieure de Lyon. **Internship** at Université Gustave Eiffel, advised by Éric Colin de Verdière and Vincent Despré. **Internship** at Technische Universität Berlin, advised by Stefan Felsner.
2019-2021	**Master in Computer Science** of École Normale Supérieure de Lyon. **Internship** at Inria Nancy, advised by Vincent Despré and Monique Teillaud. **Internship**, remote due to covid, advised by Guillem Perarnau.
2018-2019	**Bachelor in Computer Science** of École Normale Supérieure de Lyon. **Bachelor in Mathematics for Engineering** of Université Claude Bernard.

Research

[1] **A discrete analog of Tutte's barycentric embeddings on surfaces**. With Éric Colin de Verdière and Vincent Despré. To appear in *Proceedings of the 2025 Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, 2025.

[2] **Untangling Graphs on Surfaces**. With Éric Colin de Verdière and Vincent Despré. *Proceedings of the 2024 Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, 4909-4941, 2024.

[3] **Making Multicurves Cross Minimally on Surfaces**. *Proceedings of the 32nd Annual European Symposium on Algorithms (ESA)*, 308, 50:1–50:15, 2024.

[4] **A Bound for Delaunay Flip Algorithms on Flat Tori**. *Computing in Geometry and Topology (CGT)*, 2(2), 6:1–6:13, 2023. Extended abstract in *Proceedings of the 34th Canadian Conference on Computational Geometry (CCCG)*, 105-11, 2022, best student paper award.

[5] **Two lower bounds for p-centered colorings**. With Gwenaël Joret, Guillem Perarnau, Marcin Pilipczuk, and François Pitois. *Discrete Mathematics and Theoretical Computer Science (DMTCS)*, 22(4), 2020.

Software

Hyperbolic Surface Triangulations. With Vincent Despré and Monique Teillaud. A package to build and handle triangulations of closed orientable hyperbolic surfaces. Under review for integration in the *Computational Geometry Algorithms Library (CGAL)*.

Teaching

I have been in charge of exercise sessions for the following courses:

2022-2025	Assembler (36h), OpenGL (64h)
2024-2025	SQL (24h)
2022-2024	Algorithms and Programming in Python (56h)