
Education

- 2021 – on **PhD Candidate: Multivariate topological data analysis for statistical machine learning**, DataShape team
Centre Inria d'Université Côte d'Azur.
- 2018 – 2021 **MSc de l'aléatoire (Probability, Statistics, Machine Learning)**, with honors
Université Paris-Saclay (Orsay), ÉNS Rennes.
- 2020 **Agrégation in Mathematics**
ÉNS Rennes and Université Rennes 1.
- 2015 – 2018 **BSc in Mathematics**, with honors
ÉNS Rennes and Université Rennes 1.

Internships

- 2021 **Theoretical and empirical analysis of Multiparameter Persistence with applications to immunofluorescence images**, DataShape team, Centre Inria d'Université Côte d'Azur, France
Supervised by Mathieu Carrière.
- 2019 **Theoretical analysis of Morse Theory with Eilenberg Steenrod axiomatics point of view**, Department of Mathematics and Statistics, Université de Montréal, Montréal, Canada
Supervised by Octav Cornea.
- 2018 **On Singular Points of Differential Equations over a Formal Series Field**, Institut Fourier, Grenoble, France
Supervised by Andrea Pulita.

Scientific productions

Publications

- 2023 **A Framework for Fast and Stable Representations of Multiparameter Persistent Homology Decompositions**, *NeurIPS 2023*
<https://arxiv.org/pdf/2306.11170.pdf>
- 2023 **Stable Vectorization of Multiparameter Persistent Homology using Signed Barcodes as Measures**, *NeurIPS 2023*
<https://arxiv.org/pdf/2306.03801.pdf>

Pre-publication

- 2022 **Fast, Stable and Efficient Approximation of Multi-parameter Persistence Modules with MMA**
<https://arxiv.org/abs/2206.02026>

Code

- 2023 **Multiparameter Persistence using Signed Measures**
<https://github.com/DavidLapous/multipers-signed-measure>
- 2022 **Multiparameter Module Approximation**
<https://github.com/DavidLapous/multipers>

2022-on **Member of the Gudhi Library**
<https://github.com/GUDHI/gudhi-devel>

Challenges

2023 **AI & Companies**, *Mathematics Study Groups with Industry*, Ministry of Defense

Outreach

2022-on **Co-organizer of the bi-monthly DataShape seminar**

2022-on **Reviewer**, *SoCG, ICLR, NeurIPS, JACT*

Talks

2023 **Young Topologists Meeting**, *EPFL*, Lausanne

2023 **PhD Colloquium**, *Laboratoire Jean Alexandre Dieudonné*

2023 **3IA PhD Seminar**, *Centre Inria d'Université Côte d'Azur*

2023 **Datashape Seminar**

2023 **Inria PhD Seminar**, *Centre Inria d'Université Côte d'Azur*

2023 **World AI Cannes Festival**, *Presentation of the AI & Companies challenge results*

2022 **Young Researcher Forum**, *International Symposium on Computational Geometry*

2022 **Datashape Seminar**

Languages

French (mother tongue), Breton (bilingual education), English (fluent), Spanish (intermediate).

Computer languages

Proficient level

C++, Python, Cython, Latex, Bash, Julia, Inkscape.

Intermediate level

R, Scilab, Matlab, ASM.

Teaching experiences

Lecturer

2021-on **Maths for AI (grad students)**, *Centrale Marseille Digital Lab*, Nice, France.

Teaching assistant

2022–2023 **Foundation of geometric methods in data analysis (grad students)**, *Université Côte d'Azur*, Sophia Antipolis, France.

2021–2022 **Research project (grad students)**, *Université Côte d'Azur*, Sophia Antipolis, France.

2021–2022 **Economics (undergrad students)**, *Université Côte d'Azur*, Nice, France.

Previous experiences

2020–2021 **Colles* PSI* for students**, *Lycée Hoche*, Versailles, France.

*Weekly oral practice exam

2017–2018 **Colles for BSc students**, *Université Rennes 1*, Rennes, France.

2016 **Teaching assistant**, *Lycée Jean Macé*, Rennes, France.

2015 **Teaching assistant & animation**, *orphanage in Adétikopé*, Togo.

References

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