

# Hugo JACOB

## Curriculum vitae

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### Academia

- 2023-2026 **PhD Student**, LIRMM, Université de Montpellier  
Supervised by Christophe Paul and William Lochet
- 2022-2023 **M2 MPRI**, ENS Paris-Saclay (joint with other institutions)  
Courses Analysis of Algorithms, Efficient Algorithms for Computer Algebra, Foundations of Network Models, Advanced Graph Theory, Theory of Practical Graph Algorithms, Algorithmic Aspects of Combinatorics, Distributed Algorithms on Networks, Randomness in Complexity, Algorithms and Combinatorics for Geometric Graphs, Parameterized Complexity
- 2021-2022 **ARPE (Research year abroad) in Utrecht (Netherlands)**, ENS Paris-Saclay
- 2020-2021 **M1 MPRI**, ENS Paris-Saclay  
Honors: Summa cum laude  
Courses Convex and combinatorial optimisation, Software Engineering, Probabilistic Aspects of Computer Science, Algorithmics and Bioinformatics, Networks
- 2019-2020 **L3 Informatique (Bachelor's degree in Computer Science)**, ENS Paris-Saclay  
Honors: Summa cum laude  
Courses Algorithmics, Computability and Complexity, Formal languages, Logic, Discrete Mathematics, Architecture and Systems, Programming (semantics of programming languages and projects)
- Since 2019 **ENS Paris-Saclay, Computer Science Department**  
Competitive recruitment, research-oriented education
- 2017-2019 **Lycée François-René de Chateaubriand**, Rennes  
Preparatory school specialised in Mathematics, Physics and Computer Science (MPSI, MP\* option Informatique)

### Research Internships

- 2021-2022 **Exploring the class XNLP**, *Utrecht University*, Utrecht  
Supervised by Carla Groenland and Hans Bodlaender
- 2021 **Tight complexity bounds for transversal problems parameterized by the width of a given decomposition**, *University of Warsaw*, Warsaw  
Supervised by Marcin Pilipczuk
- 2020 **Longest greedy path in a grid**, *LaBRI*, Bordeaux  
Supervised by Cyril Gavoille (remote work due to the pandemic)

### Research papers

- preprint **Exact antichain saturation numbers via a generalisation of a result of Lehman-Ron**, joint work with Paul Bastide, Carla Groenland, and Tom Johnston
- IPEC22 **On the parameterized complexity of computing tree-partitions**, joint work with Hans Bodlaender, and Carla Groenland
- IPEC22 **On the complexity of problems on tree-structured graphs**, joint work with Hans Bodlaender, Carla Groenland, Marcin Pilipczuk, and Michał Pilipczuk
- ESA22 **List colouring trees in logarithmic space**, joint work with Hans Bodlaender and Carla Groenland
- IPEC22 **XNLP-completeness for parameterized problems on graphs with a linear structure**, *Best paper award*, joint work with Hans Bodlaender, Carla Groenland, Lars Jaffke, and Paloma Lima
- WG22 **Bounding twin-width for bounded-treewidth graphs, planar graphs, and bipartite graphs**, joint work with Marcin Pilipczuk

IPEC21 **Close relatives (of Feedback Vertex Set), revisited**, joint work with Thomas Bellitto, Oscar Defrain, and Marcin Pilipczuk

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## Extracurricular activities

### Member of France-IOI

Association training and selecting young French students for Informatics Olympiads (IOI, eJOI, etc)

### Played the trombone in F[ENS]foire

Student brass band of ENS Paris-Saclay

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## Languages

French Native

English Advanced

Spanish Intermediate

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## Programming languages

Advanced C, C++

Intermediate Python, OCaml

Basic Coq, bash, Scala

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## Interests

Competitive programming

Real-time strategy games

Collaborative games

Hiking in beautiful places