

Alice Joffard

Curriculum Vitae

Work Experience

- 2020 **ATER in Computer Science**, *Université Grenoble-Alpes*, Grenoble.
One year contract of research and teaching in the G-SCOP laboratory
Combinatorial Optimisation team
- 2017-2020 **PhD in Computer Science**, *Université de Lyon*, Lyon.
Domination and reconfiguration problems in graphs
Advisors : Nicolas Bousquet and Hamamache Kheddouci
- 2019 **Research Stay**, *UPC - GAPCOMB team*, Barcelona - Spain.
Five-months stay to work on probabilistic methods in Graph Theory
- 2017 **Research Internship**, *LIRIS - GOAL team*, Lyon.
Five-months internship in Graph Theory
Advisor : Hamamache Kheddouci
- 2016 **Research Internship**, *Institut Camille Jordan*, Lyon.
Four-months internship in Combinatorics
Advisor : Jiang Zeng
- 2015 **Research Internship**, *INRIA and LBBE*, Lyon.
Six-months internship in Computational Biology
Advisors : Matthieu Boulesteix and Carole Knibbe

Education

- 2016–2017 **Master in Theoretical Computer Science**, *École Normale Supérieure*, Lyon.
- 2015–2016 **M1 in General Mathematics**, *Université Claude Bernard*, Lyon.
- 2014–2015 **Master in Evolutionary Ecology**, *Université Claude Bernard*, Lyon.
- 2010–2015 **Engineering School - Bioinformatics and Modelisation Speciality**, *Institut National des Sciences Appliquées*, Lyon.

Responsibilities

- 2019 **Responsibility**, *PhD students representant*, Lyon.
Representant of the PhD students in the Graph Theory team

Laboratoire G-SCOP, Grenoble INP, Bureau H319

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Teaching

- 2020 **Lecturer in Operational Research**, *Université Grenoble-Alpes*, Grenoble.
24 hours of lectures with third year students, teaching them about linear programming and graph theory optimisation problems, creating slides, activities, tutorial videos and exams, correcting their exams.
- 2020 **Assistant teacher in Databases**, *Université Grenoble-Alpes*, Grenoble.
15 hours of tutorials and 27 hours of practicals with second year students, teaching them about SQL and databases, creating tutorial videos, following and correcting their projets.
- 2020 **Assistant teacher in Databases**, *Université Grenoble-Alpes*, Grenoble.
18 hours of tutorials and 9 hours of practicals with third year students, teaching them about SQL and databases, creating tutorial videos, following and correcting their projets.
- 2020 **Assistant teacher in Graph Theory**, *Université Grenoble-Alpes*, Grenoble.
30 hours of tutorials and 15 hours of practicals with second year students, teaching them about methods and algorithms in graph theory, stimulating them with more complex exercices, creating exercices, tutorial videos and methods sheets and correcting the exams.
- 2020 **Assistant teacher in Operational Research**, *Université Grenoble-Alpes*, Grenoble.
16 hours of tutorials with third year students, teaching them about classical algorithms and techniques in graph theory and linear programming, creating tutorial videos and exams, correcting their exams.
- 2020 **Assistant teacher in Semantics**, *Université Grenoble-Alpes*, Grenoble.
30 hours of tutorials with fourth year students, teaching them about semantic proofs, creating tutorials videos and correcting their exams.
- 2019 **Assistant teacher in Optimization**, *Université de Lyon*, Lyon.
17 hours of tutorials and 4 hours of practicals with fourth year students, teaching them about optimization problems and correcting their exams.
- 2018, 2019 **Assistant teacher in Databases**, *Université de Lyon*, Lyon.
21 hours of practicals with second year students, helping them with SQL, html, css and php programming, following and correcting their projets to code an online game.
- 2018 **Assistant teacher in Systems and Architecture**, *Université de Lyon*, Lyon.
16 hours of tutorials and 24 hours of practicals with second year students, teaching them binary system, logic circuits, and assembly language, preparing and correcting exams.
- 2018 **Assistant teacher in Numerical Algorithms**, *Université de Lyon*, Lyon.
15 hours of tutorials with third year students, training them to use the simplex method, participating to the conception of the exams and correcting them.
- 2018 **Assistant teacher in Recursive programming**, *Université de Lyon*, Lyon.
9 hours of tutorials and 12 hours of practicals with first year students, teaching them how to program in Scheme and correcting their weekly exams.
- 2017, 2019 **Assistant teacher in Imperative programming**, *Université de Lyon*, Lyon.
25 hours of practicals with first year students, helping them to code basic programs in C and correcting their practical exams.
- 2017, 2018, 2019 **Reviewer in Company Internship**, *Université de Lyon*, Lyon.
2019 2 hours of review of the internship reports of third year students in Computer Science.

Popularization

- 2017,2018,2019 **Popularization**, *Maths à Modeler*, Lyon.
Initiation to reasearch in Mathematics addressed to children.

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Research fields

Structural and Algorithmic Graph Theory
Graph Domination
Reconfiguration Problems
Complexity Theory
Approximation Algorithms

Publications

- 2021 ***TS-Reconfiguration of dominating sets in circle and circular-arc graphs***, with N. Bousquet, WADS 2021.
<https://arxiv.org/abs/2102.10568>
- 2020 ***Linear transformations between dominating sets in the TAR-model***, with N. Bousquet and P. Ouvrard, ISAAC 2020.
<https://drops.dagstuhl.de/opus/volltexte/2020/13381/>
<https://arxiv.org/abs/2006.16726>
- 2019 ***Approximating shortest connected graph transformation for trees***, with N. Bousquet, SOFSEM 2020.
https://link.springer.com/chapter/10.1007/978-3-030-38919-2_7
<https://hal.archives-ouvertes.fr/hal-02358489/>
- 2018 ***Eternal dominating sets on digraphs and orientations of graphs***, with G. Bagan and H. Kheddouci, Discrete Applied Mathematics.
<https://www.sciencedirect.com/science/article/pii/S0166218X20304820?dgcid=author>
<https://arxiv.org/abs/1805.09623>
- 2018 ***Labeled Packing of Cycles and Circuits***, with H. Kheddouci, Discussiones Mathematicae Graph Theory.
https://www.dmg.t.uz.zgora.pl/publish/view_pdf.php?ID=20211
<https://arxiv.org/abs/1805.06171>
<https://hal.archives-ouvertes.fr/hal-01791213v1>

Papers in progress

- 2021 ***Complexity of TS-Reachability in H-free graphs***, with N. Bousquet.
- 2021 ***Asymptotical result on simultaneous edge coloring***, with G. Perarnau.

Presentations to international conferences

- 2020 ***Linear transformations between dominating sets in the TAR-model***, ISAAC 2020, Online.
- 2020 ***Approximating shortest connected graph transformation for trees***, SOFSEM 2020, Limassol, Chypre.
- 2019 ***Eternal dominating sets on digraphs and orientations of graphs***, BGW 2019, Bordeaux, France.
- 2018 ***Eternal dominating sets on digraphs and orientations of graphs***, ICGT 2018, Lyon, France.

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Presentations to national conferences

- 2020 *Linear transformations between dominating sets in the TAR-model*, JGA 2020, Online.
- 2019 *Approximating shortest connected graph transformation for trees*, JGA 2019, Bruxelles, Belgique.
- 2018 *Eternal dominating sets on digraphs and orientations of graphs*, JGA 2018, Grenoble, France.
- 2017 *Labeled Packing of Cycles*, JGA 2017, Bordeaux, France.

Computer Science Skills

Theoretical Algorithmics, Complexity Theory, Graph Theory
Applied Bioinformatics, Modelisation
Programming C, C++, Python, Scheme, SQL, HTML, CSS, PHP, R, LaTeX

Languages

French Native
English C1
Italian B1
Portuguese A2
Spanish A2

Hobbies

Music Piano, Guitar, Singing
Sports Rock-climbing, Hiking, Running
Culture Arts, Gastronomy