

# Antoine Dailly

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## Curriculum Vitae

### Work Experience

- 2022–2023 **Postdoc**, *Université Clermont Auvergne, LIMOS*, Clermont-Ferrand.  
Research on algorithmic aspects of metric problems in graphs in the ANR project GRAL-MECO, under the supervision of Florent Foucaud.
- 2021–2022 **ATER (assistant teacher and researcher)**, *IUT2 de Grenoble, G-SCOP, OC team*, Grenoble, France.  
Tutorials and practical courses in Computer Science  
Domains taught : Algorithms and Programming, Graphs, Probability and Statistics, Web Development.  
Research in graphs and combinatorics.
- 2019–2021 **Postdoc**, *Instituto de Matemáticas, National Autonomous University of Mexico*, Juriquilla.  
Research in graph theory and Ramsey theory, under the supervision of Adriana Hansberg.  
Teaching in computability and complexity.
- 2018–2019 **ATER (assistant teacher and researcher)**, *Université Grenoble Alpes, G-SCOP, OC team*, Grenoble, France.  
Tutorials and practical courses in Computer Science (135h)  
Domains taught : Graphs, Complexity, Operational Research, Algorithmics, Programming in Python and Compilation.  
Research in graphs and combinatorics (reconfiguration, combinatorial games, criticality).
- 2015–2018 **PhD in Computer Science (Ministry of Higher Education and Research funding)**, *Université Claude Bernard Lyon I, LIRIS, GOAL team*, Lyon, France.  
*Criticality, identification and vertex deletion games on graphs*  
Director : Hamamache Kheddouci.  
Advisors : Aline Parreau et Éric Duchêne.  
Defended on September 27th 2018.
- 2015–2018 **Assistant teacher**, *ISFA*, Lyon, France.  
Lectures, tutorials and practical courses in Computer Science (198h)  
Domains taught : Unix, Algorithmics, Programming in Python, C++ and Java
- 2015–2018 **Scientific popularization**, *Maths à Modeler*, Lyon, France.  
Introduction to research in Mathematics and Theoretical Computer Science directed towards primary and secondary students
- 2011–2015 **Mentoring**.  
Mentoring of secondary and superior students in Mathematics, Algorithmics, Theoretical Computer Science and Programming

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## Education

- 2015–2018 **PhD in Computer Science**, *Université Claude Bernard Lyon I, LIRIS, GOAL team*, Lyon, France.  
*Criticality, identification and vertex deletion games on graphs*  
Director : Hamamache Kheddouci.  
Advisors : Aline Parreau et Éric Duchêne.  
Defended on September 27th 2018.
- 2014–2015 **Master's Degree in Computer Science – Artificial Intelligence specialization**, *Université Claude Bernard Lyon I*, Lyon, France, with honors, ranked 1/22.
- 2013–2014 **Master 1 in Computer Science**, *Université Claude Bernard Lyon I*, Lyon, France, with honors, ranked 2/98.
- 2012–2013 **Bachelor's Degree in Theoretical Computer Science**, *École Normale Supérieure de Lyon*, Lyon, France.
- 2011–2012 **Licence 2 in Mathematics and Computer Science**, *Université Montpellier II*, Montpellier, France, with honors.
- 2010–2011 **Classe Préparatoire aux Grandes Écoles – Mathematics, Physics and Industrial Sciences specialization**, *Lycée Pierre de Fermat*, Toulouse, France.
- 2010 **High School Diploma – Mathematics specialization**, *Lycée Georges Clemenceau*, Montpellier, France, with honors.

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## Research stays and internships

- 2017 **Research stay**, *Instituto de Matemáticas*, Juriquilla, Mexico.  
Two-months research stay to study the Murty-Simon Conjecture.  
Mentor : Adriana Hansberg.
- 2015 **Research internship**, *LIRIS – GOAL team*, Lyon, France.  
Five-months internship on octal games on graphs.  
Advisors : Aline Parreau and Éric Duchêne
- 2014 **Research internship**, *ERIC*, Lyon, France.  
Two-months internship on the adaptation of multi-agents paradigm to the Map&Reduce model.  
Advisor : Nadia Kabachi
- 2013 **Research internship**, *INRIA Sophia Antipolis – WIMMICS team*, Valbonne, France.  
Three-months internship on semantic similarity measures.  
Advisors : Elena Cabrio and Julien Cojan

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## Publications in international journals

- J8 Dailly, A., Duchêne, E., Parreau, A., & Sidorowicz, E. (2022). **The neighbour sum distinguishing relaxed edge colouring**, *Applied Mathematics and Computation*, 419, 126864..  
<https://hal.archives-ouvertes.fr/hal-03064954>
- J7 Dailly, A., Hansberg, A., & Ventura, D. (2021). **On the balanceability of some graph classes**, *Discrete Applied Mathematics*, 291, 51-63..  
<https://hal.archives-ouvertes.fr/hal-02497933>

- J6 Dailly, A., Duchêne, E., Larsson, U., & Paris, G. (2020). **Partition Games**, *Discrete Applied Mathematics*, 285, 509-525..  
<https://hal.archives-ouvertes.fr/hal-01723190>
- J5 Dailly, A., Moncel, J., & Parreau, A. (2019). **Connected Subtraction Games on Subdivided Stars**, *INTEGERS*, 19..  
<https://hal.archives-ouvertes.fr/hal-01849181>
- J4 Dailly, A., Foucaud, F., & Hansberg, A. (2019). **Strengthening the Murty-Simon conjecture on diameter 2 critical graphs**, *Discrete Mathematics*, 342(11), 3142-3159..  
<https://hal.archives-ouvertes.fr/hal-01959683>
- J3 Dailly, A., Gledel, V., & Heinrich, M. (2019). **A generalization of Arc-Kayles**, *International Journal of Game Theory*, 48(2), 491-511..  
<https://hal.archives-ouvertes.fr/hal-01587921>
- J2 Beaudou, L., Coupechoux, P., Dailly, A., Gravier, S., Moncel, J., Parreau, A., & Sopena, E. (2018). **Octal Games on Graphs : The game 0.33 on subdivided stars and bistars**, *Theoretical Computer Science*, 746, 19-35..  
<https://hal.archives-ouvertes.fr/hal-01418153>
- J1 Bousquet, N., Dailly, A., Duchene, E., Kheddouci, H., & Parreau, A. (2017). **A Vizing-like theorem for union vertex-distinguishing edge coloring**, *Discrete Applied Mathematics*, 232, 88-98..  
<https://hal.archives-ouvertes.fr/hal-01313088>

## Submitted publications

***Complexity and algorithms for Isometric Path Cover on chordal graphs and beyond***, with D. Chakraborty, S. Das, F. Foucaud, H. Gahlawat, S. K. Ghosh.  
Accepted at ISAAC 2022.

<https://hal.archives-ouvertes.fr/hal-03710812>

***The neighbour sum distinguishing edge-weighting with local constraints***, with E. Sidorowicz.

<https://hal.archives-ouvertes.fr/hal-03615738>

<https://arxiv.org/abs/2203.11521>

***The balancing number and list balancing number of some graph classes***, with L. Eslava, A. Hansberg, D. Ventura.

<https://hal.archives-ouvertes.fr/hal-03015201>

<https://arxiv.org/abs/2011.11119>

## Talks in international conferences and colloquiums

- July 2022 ***Neighbour sum-distinguishing edge colorings with local constraints***, ICGT 2022, Montpellier, France.
- January 2019 ***Connected Subtraction Games on Graphs***, CGTC3, Lisbonne.
- July 2018 ***A strengthening of the Murty-Simon Conjecture***, ICGT 2018, Lyon, France.
- January 2017 ***Octal Games on Graphs***, CGTC2, Lisbon, Portugal.

November 2016 **A Vizing-like theorem for union vertex-distinguishing edge coloring**, BGW 2016, Bordeaux, France.

## Talks in national conferences and colloquiums

November 2022 **Isometric Path Cover : complexité et algorithmes sur les graphes cordaux**, JGA 2022, Paris, France.

November 2021 **La coloration d-relaxée somme-distinguante**, JGA 2021, Online.

November 2020 **Équilibrabilité et nombre d'équilibrage des cycles**, JGA 2020, Online.

March 2020 **Balancing graphs using bicolored edges**, XXXV Coloquio Víctor Neumann-Lara de Teoría de Gráficas, Combinatoria y su Aplicaciones, Santiago de Querétaro, Mexico.

November 2018 **Renforcer la conjecture de Murty-Simon sur les graphes critiques de diamètre 2**, JGA 2018, Grenoble, France.

November 2016 **Coloration d'arêtes union-distinguante**, JGA 2016, Paris, France.

November 2015 **Jeux octaux sur les graphes : 0.03**, JGA 2015, Orléans, France.

## Talks in seminars

October 2022 **Balanceability**, Séminaire AICoLoCo, Clermont-Ferrand, France.

March 2022 **Subtraction Games on Graphs : Complexity, regularity and polynomial algorithms**, Séminaire LIGM, Paris (Champs-sur-Marne), France.

October 2021 **Équilibrabilité**, Séminaire de mathématiques discrètes, Grenoble, France.

October 2021 **Strengthening the Murty-Simon Conjecture on diameter-2-critical graphs**, VCU Discrete Mathematics Seminar, Virginia Commonwealth University (online).

February 2021 **Équilibrabilité**, Séminaire ACRO, Marseille, France (online).

Octobre 2020 **Jeux de soustraction dans les graphes : Complexité et algorithmes polynomiaux**, Groupe de travail GaMoC, Orléans, France.

September 2019 **A strengthening of the Murty-Simon Conjecture for diameter 2 critical graphs**, Seminario Preguntón, UNAM Juriquilla, Mexico.

April 2019 **Jeux octaux dans les graphes**, Séminaire LIS, Marseille.

March 2019 **Jeux octaux dans les graphes**, Séminaire LIB, Dijon.

January 2019 **Jeux octaux dans les graphes**, Séminaire Optimisation Combinatoire, Bordeaux.

December 2018 **Jeux octaux dans les graphes**, Séminaire AICoLoCo, Clermont-Ferrand.

December 2017 **Rooks and Arc-Kayles**, Seminario Preguntón, UNAM Juriquilla, Mexico.

April 2016 **Coloration d'arêtes union-distinguante**, SIF PhD students' seminar, Paris, France.

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October 2015 **Octal games on graphs : 0.03 and 0.33** , *Graphes@Lyon*, Lyon, France.

## Posters

January 2020 **Gráficas balanceables**, UNAM Juriquilla, Mexico.

## Responsibilities

2013–2015 **Voluntary activities**, *AML (Association des Miagistes et Informaticiens de Lyon)*, a student organization, Lyon, France.

Active volunteer (2013–2014), then secretary of the organization (2014–2015)

2013–2015 **Student representative**, *Computer Science Department Council*, Lyon, France.  
2013–2015

## Special Skills

French Native speaker

English Fluent, C1 level

*B2 level validated by the CLES in 2013*

Spanish Basic

Theoretical Algorithmics, Combinatorial Game Theory, Graph Theory, Complexity Theory  
Computer  
Science

Programming C/C++, Python, Java, LaTeX, Scheme  
Languages

Systems Linux, Windows