

Antoine Dailly

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

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.

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

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>

Publications in international conference proceedings

- C1 Chakraborty, D., Dailly, A., Das, S., Foucaud, F., Gahlawat, H., & Ghosh, S. K. (2022). **Complexity and algorithms for Isometric Path Cover on chordal graphs and beyond**, *Proceedings of the 33rd International Symposium on Algorithms and Computation (ISAAC 2022)*, *Leibniz International Proceedings in Informatics*, 248,12 :1-12 :17.
<https://hal.archives-ouvertes.fr/hal-03710812>

Submitted publications

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

- January 2023 **Subtraction Games on Graphs**, CGTC3, São Miguel, Açores, Portugal.
- 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.

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 Computer Science	Algorithmics, Combinatorial Game Theory, Graph Theory, Complexity Theory	
Programming Languages	C/C++, Python, Java, LaTeX, Scheme	
Systems	Linux, Windows	