

CURRICULUM VITAE

IGNASI SAU VALLS

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PERSONAL INFORMATION

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EDUCATION AND POSITIONS

- 9/2000–6/2005 **Graduate in Mathematics.**
FME¹ and CFIS² of UPC³, Barcelona, Catalonia. 5-years course, equivalent to M2.
- 9/2000–7/2006 **Graduate in Telecommunications Engineering.**
ETSETB⁴ and CFIS of UPC, Barcelona, Catalonia. 5-years course, equivalent to M2.
- 9/2005–3/2006 **Erasmus Program** at *Université de Nice Sophia Antipolis* (Nice, France).
- 2/2006–10/2009 **Ph.D student**, defended on October 16, 2009.
Optimization in Graphs under Degree Constraints. Application to Telecommunication Networks.
Ph.D in Computer Science and Mathematics in **joint supervision**:
Since 10/2006: MASCOTTE⁵ team of INRIA⁶/CNRS/UNS⁷, Sophia-Antipolis, France.
Under the supervision of Jean-Claude Bermond and David Coudert.
Funded by a BDI (CNRS/région PACA) grant.
Teaching assistant at the department of Computer Science at UNS.
Since 2/2006: *Departament de Matemàtica Aplicada IV* of UPC, Barcelona, Catalonia.
Under the supervision of Xavier Muñoz.
- 11/2009–7/2010 **Postdoc** at *Computer Science Department of the Technion*, Haifa, Israel.
- Since 10/2010 **Chargé de Recherche CNRS⁸ (Junior Researcher)** at LIRMM⁹,
Montpellier, France, within AIGCo¹⁰ team. This is my current position.
- 8/2016–7/2017 **Visiting Professor** at *Department of Mathematics* of UFC¹¹, Fortaleza, Brazil,
within ParGO¹² team.
- 6/2018 *Habilitation à Diriger des Recherches (HDR)* at Université de Montpellier.

RESEARCH INTERESTS

- Graph theory.
- Parameterized complexity, mainly FPT algorithms and kernelization.
- Approximation algorithms and complexity theory.
- Combinatorial optimization and networks.

¹FME: Facultat de Matemàtiques i Estadística, UPC

²CFIS: Centre de Formació Interdisciplinària Superior de la UPC, see <https://cfis.upc.edu/ca>

³UPC: Universitat Politècnica de Catalunya (Polytechnical University of Catalonia)

⁴ETSETB: Escola Tècnica Superior d'Enginyeria de Telecomunicació de Barcelona, UPC

⁵MASCOTTE: Méthodes Algorithmiques, Simulation et Combinatoire pour l'Optimisation des Télécommunications

⁶INRIA: Institut National de Recherche en Informatique et en Automatique

⁷UNS: Université de Nice-Sophia Antipolis

⁸CNRS: Centre National de la Recherche Scientifique

⁹LIRMM: Laboratoire d'Informatique, Robotique et Microélectronique de Montpellier

¹⁰AIGCo: Algorithmes, Graphes et Combinatoire

¹¹UFC: Universidade Federal do Ceará

¹²ParGO: Paralelismo, Grafos e Otimização combinatória

PUBLICATIONS

International journals

2008

- [J1] I. SAU AND J. ŽEROVNIK.
An Optimal Permutation Routing Algorithm for Full-Duplex Hexagonal Mesh Networks.
Discrete Mathematics & Theoretical Computer Science (DMTCS), 10(3):49-62, 2008.

2009

- [J2] O. AMINI, S. PÉRENNES, AND I. SAU.
Hardness and Approximation of Traffic Grooming.
Theoretical Computer Science (TCS), 410(38-40):3751-3760, 2009.
- [J3] F. HUC, I. SAU, AND J. ŽEROVNIK.
 (ℓ, k) -Routing on Plane Grids.
Journal of Interconnection Networks (JOIN), 10(1-2):27-57, 2009.
- [J4] G. B. MERTZIOS, I. SAU, AND S. ZAKS.
A New Intersection Model and Improved Algorithms for Tolerance Graphs.
SIAM Journal on Discrete Mathematics (SIDMA), 23(4):1800-1813, 2009.

2010

- [J5] J.-C. BERMOND, C. J. COLBOURN, L. GIONFRIDDO, G. QUATTROCCHI, AND I. SAU.
Drop Cost and Wavelength Optimal Two-Period Grooming with Ratio 4.
SIAM Journal on Discrete Mathematics (SIDMA), 24(2): 400-419, 2010.
- [J6] I. SAU AND D. M. THILIKOS.
Subexponential Parameterized Algorithms for Degree-constrained Subgraph Problems on Planar Graphs.
Journal of Discrete Algorithms (JDA), 8(3): 330-338, 2010.
- [J7] D. COUDERT, F. GIROIRE, AND I. SAU.
Circuits in Graphs Through a Prescribed Set of Ordered Vertices.
Journal of Interconnection Networks (JOIN), 11(3-4): 121-141, 2010.

2011

- [J8] J.-C. BERMOND, X. MUÑOZ, AND I. SAU.
Traffic Grooming in Bidirectional WDM Ring Networks.
Networks, 58(1): 20-35, 2011.
- [J9] G. B. MERTZIOS, I. SAU, AND S. ZAKS.
The Recognition of Tolerance and Bounded Tolerance Graphs.
SIAM Journal on Computing (SICOMP), 40(5): 1234-1257, 2011.
- [J10] I. SAU AND D. M. THILIKOS.
On Self-duality of Branchwidth on Graphs of Bounded Genus.
Discrete Applied Mathematics (DAM), 159(17): 2184-2186, 2011.
- [J11] I. ADLER, F. DORN, F. V. FOMIN, I. SAU, AND D. M. THILIKOS.
Faster Parameterized Algorithms for Minor Containment.
Theoretical Computer Science (TCS), 412(50): 7018-7028, 2011.
- [J12] X. MUÑOZ, Z. LI, AND I. SAU.
Edge-partitioning Regular Graphs for Ring Traffic Grooming with a Priori Placement of the ADMs.
SIAM Journal on Discrete Mathematics (SIDMA), 25(4): 1490-1505, 2011.

2012

- [J13] J.-C. BERMOND, D. COUDERT, J. MOULIERAC, S. PÉRENNES, I. SAU, AND F. SOLANO DONADO.
GMPLS Label Space Minimization through Hypergraph Layouts.
Theoretical Computer Science (TCS), 444:3-16, 2012.
- [J14] I. SAU, P. ŠPARL, AND J. ŽEROVNIK.
Simpler Multicoloring of Triangle-free Hexagonal Graphs.
Discrete Mathematics (DM), 312(1): 181-187, 2012.
- [J15] O. AMINI, I. SAU, AND S. SAURABH.
Parameterized Complexity of Finding Small Degree-constrained Subgraphs.
Journal of Discrete Algorithms (JDA), 10: 70-83, 2012.
- [J16] I. ADLER, F. DORN, F. V. FOMIN, I. SAU, AND D. M. THILIKOS.
Fast Minor Testing in Planar Graphs.
Algorithmica, 64(1): 69-84, 2012.
- [J17] G. B. MERTZIOS, I. SAU, M. SHALOM, AND S. ZAKS.
Placing Regenerators in Optical Networks to Satisfy Multiple Sets of Requests.
IEEE/ACM Transactions on Networking (ToN), 20(6): 1870-1879, 2012.
- [J18] O. AMINI, D. PELEG, S. PÉRENNES, I. SAU, AND S. SAURABH.
On the approximability of some degree-constrained subgraph problems.
Discrete Applied Mathematics (DAM), 160(12): 1661-1679, 2012.

2013

- [J19] J. RUÉ, I. SAU, AND D. M. THILIKOS.
Asymptotic Enumeration of Non-crossing Partitions on Surfaces.
Discrete Mathematics (DM), 313(5-6): 635-649, 2013.
- [J20] D. PELEG, I. SAU, AND M. SHALOM.
On approximating the d -girth of a graph.
Discrete Applied Mathematics (DAM), 161(16-17): 2587-2596, 2013.

2014

- [J21] N. BOUSQUET, D. GONÇALVES, G. B. MERTZIOS, C. PAUL, I. SAU, AND S. THOMASSÉ.
Parameterized Domination in Circle Graphs.
Theory of Computing Systems (TOCS), 54(1): 45-72, 2014.
- [J22] J. RUÉ, I. SAU, AND D. M. THILIKOS.
Dynamic Programming for Graphs on Surfaces.
ACM Transactions on Algorithms (TALG), 10(2): 8, 2014.
- [J23] G. JORET, C. PAUL, I. SAU, S. SAURABH, AND S. THOMASSÉ.
Hitting and Harvesting Pumpkins.
SIAM Journal on Discrete Mathematics (SIDMA), 28(3): 1363-1390, 2014.

2015

- [J24] J. BASTE AND I. SAU.
The role of planarity in connectivity problems parameterized by treewidth.
Theoretical Computer Science (TCS), 570: 1-14, 2015.
- [J25] V. GARNERO, C. PAUL, I. SAU, AND D.M. THILIKOS.
Explicit linear kernels via dynamic programming.
SIAM Journal on Discrete Mathematics (SIDMA), 29(4): 1864-1894, 2015.

2016

- [J26] E. KIM, A. LANGER, C. PAUL, F. REIDL, P. ROSSMANITH, I. SAU, AND S. SIKDAR.
Linear kernels and single-exponential algorithms via protrusion decompositions.
ACM Transactions on Algorithms (TALG), 12(2): 21, 2016.

- [J27] J.-F. RAYMOND, I. SAU, AND D. M. THILIKOS.
An edge variant of the Erdős-Pósa property.
Discrete Mathematics (DM), 339(8): 2027-2035, 2016.
- 2017**
- [J28] E. KIM, C. PAUL, I. SAU, AND D. M. THILIKOS.
Parameterized Algorithms for Min-Max Multiway Cut and List Digraph Homomorphism.
Journal of Computer and System Sciences (JCSS), 86: 191-206, 2017.
- [J29] L. P. MONTEJANO AND I. SAU.
On the complexity of computing the k -restricted edge-connectivity of a graph.
Theoretical Computer Science (TCS), 662: 31-39, 2017.
- [J30] J. BASTE, F. BEGGAS, H. KHEDDOUCI, AND I. SAU.
On the Parameterized Complexity of the Edge Monitoring Problem.
Information Processing Letters (IPL), 121: 39-44, 2017.
- [J31] V. GARNERO, I. SAU, AND D. M. THILIKOS.
A linear kernel for planar red-blue dominating set.
Discrete Applied Mathematics (DAM), 217: 536-547, 2017.
- [J32] J. BASTE, C. PAUL, I. SAU, AND C. SCORNAVACCA.
Efficient FPT algorithms for (strict) compatibility of unrooted phylogenetic trees.
Bulletin of Mathematical Biology (BMAB), 79(4): 920-938, 2017.
- [J33] L. FARIA, S. KLEIN, I. SAU, AND R. SUCUPIRA.
Improved Kernels for Signed Max Cut ATLB on (r, ℓ) -graphs.
Discrete Mathematics & Theoretical Computer Science (DMTCS), 19(1), 2017.
- [J34] D. CHATZIDIMITRIOU, J.-F. RAYMOND, I. SAU, AND D. M. THILIKOS.
Minors in graphs of large θ_r -girth.
European Journal of Combinatorics (EJC), 65: 106-121, 2017.
- [J35] D. GÖZÜPEK, S. ÖZKAN, C. PAUL, I. SAU, AND M. SHALOM.
Parameterized complexity of the MINCCA problem on graphs of bounded decomposability.
Theoretical Computer Science (TCS), 690: 91-103, 2017.
- [J36] J. BASTE, L. FARIA, S. KLEIN, AND I. SAU.
Parameterized Complexity Dichotomy for (r, ℓ) -Vertex Deletion.
Theory of Computing Systems (TOCS), 61(3): 777-794, 2017.
- [J37] N. COHEN, D. GONÇALVES, E. KIM, C. PAUL, I. SAU, D. M. THILIKOS, AND M. WELLER.
A Polynomial-time Algorithm for Outerplanar Diameter Improvement.
Journal of Computer and System Sciences (JCSS), 89: 315-327, 2017.
- 2018**
- [J38] S. OUM, E. KIM, C. PAUL, I. SAU, AND D. M. THILIKOS.
An FPT 2-Approximation for Tree-Cut Decomposition.
Algorithmica, 80(1): 116-135, 2018.
- [J39] H. PERRET DU CRAY AND I. SAU.
Improved FPT algorithms for weighted independent set in bull-free graphs.
Discrete Mathematics (DM), 341(2): 451-462, 2018.
- [J40] D. CHATZIDIMITRIOU, J.-F. RAYMOND, I. SAU, AND D. M. THILIKOS.
An $O(\log \text{OPT})$ -approximation for covering and packing minor models of θ_r .
Algorithmica, 80(4): 1330-1356, 2018.
- [J41] J. BASTE, M. NOY, AND I. SAU.
On the number of labeled graphs of bounded treewidth.
European Journal of Combinatorics (EJC), 71: 12-21, 2018.

- [J42] J. ARAÚJO, J. BASTE, AND I. SAU.
Ruling out FPT algorithms for Weighted Coloring on forests.
Theoretical Computer Science (TCS), 729: 11-19, **2018**.
- [J43] V. GARNERO AND I. SAU.
A linear kernel for planar total dominating set.
Discrete Mathematics & Theoretical Computer Science (DMTCS), 20(1), **2018**.
- [J44] S. R. ALVES, K. K. DABROWSKI, L. FARIA, S. KLEIN, I. SAU, AND U. S. SOUZA.
On the (parameterized) complexity of recognizing well-covered (r, ℓ) -graphs.
Theoretical Computer Science (TCS), 746: 36-48, **2018**.
- [J45] N. COHEN, F. HAVET, D. MAZAURIC, I. SAU, AND R. WATRIGANT.
Complexity Dichotomies for the Minimum \mathcal{F} -Overlay Problem.
Journal of Discrete Algorithms (JDA), 52: 133-142, **2018**.
- [J46] J.-F. RAYMOND, P. ABOULKER, S. FIORINI, T. HUYNH, G. JORET, AND I. SAU.
A tight Erdős-Pósa function for wheel minors.
SIAM Journal on Discrete Mathematics (SIDMA), 32(3): 2302-2312, **2018**.
- 2019**
- [J47] V. GARNERO, C. PAUL, I. SAU, AND D. M. THILIKOS.
Explicit Linear Kernels for Packing Problems.
Algorithmica, 81(4): 1615-1656, **2019**.
- [J48] J. BASTE, D. RAUTENBACH, AND I. SAU.
Upper Bounds on the Uniquely Restricted Chromatic Index.
Journal of Graph Theory (JGT), 91(3): 251-258, **2019**.
- [J49] J. ARAÚJO, C. LINHARES SALES, I. SAU, AND A. SILVA.
Weighted proper orientations of trees and graphs of bounded treewidth.
Theoretical Computer Science (TCS), 771: 39-48, **2019**.
- [J50] J. DE O. BASTOS, F. S. BENEVIDES, G. O. MOTA, AND I. SAU.
Counting Gallai 3-colorings of complete graphs.
Discrete Mathematics (DM), 342(9): 2618-263, **2019**.
- [J51] J. BASTE, D. RAUTENBACH, AND I. SAU.
Approximating Maximum Uniquely Restricted Matchings in Bipartite Graphs.
Discrete Applied Mathematics (DAM), 267: 30-40, **2019**.
- [J52] M. BOUGERET AND I. SAU.
How much does a treedepth modulator help to obtain polynomial kernels beyond sparse graphs?
Algorithmica, 81(10): 4043-4068, **2019**.
- 2020**
- [J53] J. BASTE, I. SAU, AND D. M. THILIKOS.
Hitting minors on bounded treewidth graphs. I. General upper bounds.
SIAM Journal on Discrete Mathematics (SIDMA), 34(3), 1623-1648, **2020**.
- [J54] J. BASTE, I. SAU, AND D. M. THILIKOS.
Hitting minors on bounded treewidth graphs. II. Single-exponential algorithms.
Theoretical Computer Science (TCS), 814: 135-152, **2020**.
- [J55] J. BASTE, I. SAU, AND D. M. THILIKOS.
Hitting minors on bounded treewidth graphs. III. Lower bounds.
Journal of Computer and System Sciences (JCSS), 109: 56-77, **2020**.
- [J56] J. BASTE, D. GÖZÜPEK, C. PAUL, I. SAU, M. SHALOM, AND D. M. THILIKOS.
Parameterized complexity of finding a spanning tree with minimum reload cost diameter.
Networks, 75(3): 259-277, **2020**.

- [J57] J. ARAÚJO, V. A. CAMPOS, A. K. MAIA, I. SAU, AND A. SILVA.
On the complexity of finding internally vertex-disjoint long directed paths.
Algorithmica, 82(6): 1616-1639, 2020.
- [J58] J. ARAÚJO, V. A. CAMPOS, C. V. G. C. LIMA, V. F. DOS SANTOS, I. SAU, AND A. SILVA.
Dual parameterization of Weighted Coloring.
Algorithmica, 82(8), 2316-2336, 2020.
- [J59] L. FARIA, S. KLEIN, I. SAU, U. S. SOUZA, AND R. SUCUPIRA.
Maximum cuts in edge-colored graphs.
Discrete Applied Mathematics (DAM), 281: 229-234, 2020.

2021

- [J60] G. C. M. GOMES AND I. SAU.
Finding cuts of bounded degree: complexity, FPT and exact algorithms, and kernelization.
To appear in *Algorithmica*. DOI:10.1007/s00453-021-00798-8.
- [J61] P. T. LIMA, V. F. DOS SANTOS, I. SAU, AND U. S. SOUZA.
Reducing graph transversals via edge contractions.
Journal of Computer and System Sciences (JCSS), 120: 62-74, 2021.

To appear

- [J62] L. A. C. VIANA, M. CAMPÊLO, I. SAU, AND A. SILVA.
A Unifying Model for Locally Constrained Spanning Tree Problems.
To appear in *Journal of Combinatorial Optimization (JOCO)*.
- [J63] R. BELMONTE AND I. SAU.
On the complexity of finding large odd induced subgraphs and odd colorings.
To appear in *Algorithmica*.
- [J64] V. A. CAMPOS, G. C. M. GOMES, A. IBIAPINA, R. LOPES, I. SAU, AND A. SILVA.
Coloring problems on bipartite graphs of small diameter.
To appear in *Electronic Journal of Combinatorics (E-JC)*.
- [J65] R. LOPES AND I. SAU.
A relaxation of the Directed Disjoint Paths problem: a global congestion metric helps.
To appear in *Theoretical Computer Science (TCS)*.
- [J66] I. SAU AND U. S. SOUZA.
Hitting forbidden induced subgraphs on bounded treewidth graphs.
To appear in *Information and Computation (I&C)*.

International conferences

- [C1] J.-C. BERMOND, D. COUDERT, X. MUÑOZ, AND I. SAU.
Traffic Grooming in Bidirectional WDM Ring Networks.
In Proc. of the IEEE-LEOS International Conference on Transparent Optical Networks (ICTON), volume 3, pages 19-22, Nottingham, UK, June 2006.
- [C2] I. SAU AND J. ŽEROVNIK.
Optimal Permutation Routing on Mesh Networks.
In Proc. of the International Network Optimization Conference (INOC), Spa, Belgium, April 2007.
- [C3] O. AMINI, S. PÉRENNES, AND I. SAU.
Hardness and Approximation of Traffic Grooming.
In Proc. of the 18th International Symposium on Algorithms and Computation (ISAAC), volume 4835 of LNCS, pages 561-573, Sendai, Japan, December 2007.

- [C4] O. AMINI, I. SAU, AND S. SAURABH.
Parameterized Complexity of the Smallest Degree-Constrained Subgraph Problem.
In Proc. of the International Workshop on Parameterized and Exact Computation (IWPEC), volume 5008 of LNCS, pages 13-29, Victoria, Canada, May 2008.
- [C5] X. MUÑOZ AND I. SAU.
Traffic Grooming in Unidirectional WDM Rings with Bounded-Degree Request Graph.
In Proc. of the 34th International Workshop on Graph-Theoretic Concepts in Computer Science (WG), volume 5344 of LNCS, pages 300-311, Durham University, U.K., July 2008.
- [C6] O. AMINI, D. PELEG, S. PÉRENNES, I. SAU, AND S. SAURABH.
Degree-Constrained Subgraph Problems: Hardness and Approximation Results.
In Proc. of the 6th Workshop on Approximation and Online Algorithms (WAOA), volume 5426 of LNCS, pages 29-42, Universität Karlsruhe, Germany, September 2008.
- [C7] I. SAU AND D. M. THILIKOS.
Subexponential Parameterized Algorithms for Bounded-Degree Connected Subgraph Problems on Planar Graphs.
In Proc. of DIMAP workshop on Algorithmic Graph Theory (AGT), *Electronic Notes in Discrete Mathematics*, 32:59-66, University of Warwick, U.K., March 2009.
- [C8] J.-C. BERMOND, D. COUDERT, J. MOULIERAC, S. PÉRENNES, H. RIVANO, I. SAU, AND F. SOLANO.
MPLS label stacking on the line network.
In Proc. of IFIP Networking, volume 5550 of LNCS, pages 809-820, Aachen, Germany, May 2009.
- [C9] J.-C. BERMOND, D. COUDERT, J. MOULIERAC, S. PÉRENNES, I. SAU, AND F. SOLANO.
Designing Hypergraph Layouts to GMPLS Routing Strategies.
In Proc. of the 16th International Colloquium on Structural Information and Communication Complexity (SIROCCO), volume 5869 of LNCS, pages 57-71, Piran, Slovenia, May 2009.
- [C10] I. SAU AND D. M. THILIKOS.
On Self-duality of Branchwidth in Graphs of Bounded Genus.
In Proc. of the 8th Cologne Twente Workshop on Graphs and Combinatorial Optimization (CTW), pages 12-22. Paris, France, June 2009.
- [C11] G. B. MERTZIOS, I. SAU, AND S. ZAKS.
A New Intersection Model and Improved Algorithms for Tolerance Graphs.
In Proc. of the 35th International Workshop on Graph-Theoretic Concepts in Computer Science (WG), volume 5911 of LNCS, pages 285-295, Montpellier, France, June 2009.
- [C12] Z. LI AND I. SAU.
Graph Partitioning and Traffic Grooming with Bounded Degree Request Graph.
In Proc. of the 35th International Workshop on Graph-Theoretic Concepts in Computer Science (WG), volume 5911 of LNCS, pages 250-261, Montpellier, France, June 2009.
Best student paper award.
- [C13] D. COUDERT, F. GIROIRE, AND I. SAU.
Edge-Simple Circuits Through 10 Ordered Vertices in Square Grids.
In Proc. of the 20th International Workshop on Combinatorial Algorithms (IWOCA), volume 5874 of LNCS, pages 134-145, Opava, Czech Republic, June 2009.
- [C14] G. B. MERTZIOS, I. SAU, AND S. ZAKS.
The Recognition of Tolerance and Bounded Tolerance Graphs.
In Proc. of the 27th International Symposium on Theoretical Aspects of Computer Science (STACS), volume 5 of LIPIcs, pages 858-596, Nancy, France, March 2010.
- [C15] I. SAU, M. SHALOM, AND S. ZAKS.
Traffic Grooming in Star Networks via Matching Techniques.

- In Proc. of the 17th International Colloquium on Structural Information and Communication Complexity (SIROCCO), volume 6058 of LNCS, pages 41-56, Sirince, Turkey, June 2010.*
- [C16] I. ADLER, F. DORN, F. V. FOMIN, I. SAU, AND D. M. THILIKOS.
Faster Parameterized Algorithms for Minor Containment.
In Proc. of the 12th Scandinavian Symposium and Workshops on Algorithm Theory (SWAT), volume 6139 of LNCS, pages 322-333, Bergen, Norway, June 2010.
- [C17] G. B. MERTZIOS, I. SAU, M. SHALOM, AND S. ZAKS.
Placing Regenerators in Optical Networks to Satisfy Multiple Sets of Requests.
In Proc. of the 37th International Colloquium on Automata, Languages and Programming (ICALP), volume 6199 of LNCS, pages 333-344, Bordeaux, France, July 2010.
Best paper award of Track C.
- [C18] J. RUÉ, I. SAU, AND D.M. THILIKOS.
Dynamic Programming for Graphs on Surfaces.
In Proc. of the 37th International Colloquium on Automata, Languages and Programming (ICALP), volume 6198 of LNCS, pages 372-383, Bordeaux, France, July 2010.
- [C19] I. ADLER, F. DORN, F. V. FOMIN, I. SAU, AND D. M. THILIKOS.
Fast Minor Testing in Planar Graphs.
In Proc. of the 18th Annual European Symposium on Algorithms (ESA), volume 6346 of LNCS, pages 97-109, Liverpool, U.K., September 2010.
- [C20] D. PELEG, I. SAU, AND M. SHALOM.
On approximating the d -girth of a graph.
In Proc. of the 37th International Conference on Current Trends in Theory and Practice of Computer Science (SOFSEM), volume 6453 of LNCS, pages 467-481, Novy Smokovec, Slovakia, January 2011.
- [C21] G. JORET, C. PAUL, I. SAU, S. SAURABH, AND S. THOMASSÉ.
Hitting and Harvesting Pumpkins.
In Proc. of the 19th Annual European Symposium on Algorithms (ESA), volume 6942 of LNCS, pages 394-407, Saarbrücken, Germany, September 2011.
- [C22] J. RUÉ, I. SAU, AND D. M. THILIKOS.
Dynamic Programming for H -minor-free Graphs (Extended Abstract).
In Proc. of the 18th International Conference on Computing and Combinatorics (COCOON), volume 7434 of LNCS, pages 86-97, Sydney, Australia, August 2012.
- [C23] N. BOUSQUET, D. GONÇALVES, G. B. MERTZIOS, C. PAUL, I. SAU, AND S. THOMASSÉ.
Parameterized Domination in Circle Graphs.
In Proc. of the 38th International Workshop on Graph-Theoretic Concepts in Computer Science (WG), volume 7551 of LNCS, pages 308-319, Jerusalem, Israel, June 2012.
- [C24] V. GARNERO, I. SAU, AND D. M. THILIKOS.
A linear kernel for planar red-blue dominating set.
In Proc. of the 12th Cologne Twente Workshop on Graphs and Combinatorial Optimization (CTW), pages 117-120, Enschede, The Netherlands, May 2013.
- [C25] E. KIM, A. LANGER, C. PAUL, F. REIDL, P. ROSSMANITH, I. SAU, AND S. SIKDAR.
Linear kernels and single-exponential algorithms via protrusion decompositions.
In Proc. of the 40th International Colloquium on Automata, Languages and Programming (ICALP), volume 7965 of LNCS, pages 613-624, Riga, Latvia, July 2013.
- [C26] V. GARNERO, C. PAUL, I. SAU, AND D. M. THILIKOS.
Explicit linear kernels via dynamic programming.
In Proc. of the 31st Symposium on Theoretical Aspects of Computer Science (STACS), volume 25 of LIPIcs, pages 312-324, Lyon, France, March 2014.
- [C27] D. CHATZIDIMITRIOU, J.-F. RAYMOND, I. SAU, AND D. M. THILIKOS.
Covering and packing pumpkin models.

- In Proc. of the 9th International Colloquium on Graph Theory and Combinatorics (ICGT), Grenoble, France, June-July 2014.*
- [C28] J.-F. RAYMOND, I. SAU, AND D. M. THILIKOS.
An edge variant of the Erdős-Pósa property.
In Proc. of the 9th International Colloquium on Graph Theory and Combinatorics (ICGT), Grenoble, France, June-July 2014.
- [C29] H. PERRET DU CRAY AND I. SAU.
Improved FPT algorithms for weighted independent set in bull-free graphs.
In Proc. of the 9th International Symposium on Parameterized and Exact Computation (IPEC), volume 8894 of LNCS, pages 282-293, Grenoble, Warsaw, Poland, September 2014.
- [C30] J. BASTE AND I. SAU.
The role of planarity in connectivity problems parameterized by treewidth.
In Proc. of the 9th International Symposium on Parameterized and Exact Computation (IPEC), volume 8894 of LNCS, pages 63-74, Grenoble, Warsaw, Poland, September 2014.
- [C31] L. P. MONTEJANO AND I. SAU.
On the complexity of computing the k -restricted edge-connectivity of a graph.
In Proc. of the 41st International Workshop on Graph-Theoretic Concepts in Computer Science (WG), volume 9224 of LNCS, pages 219-233, Munich, Germany, June 2015.
- [C32] N. COHEN, D. GONÇALVES, E. KIM, C. PAUL, I. SAU, D. M. THILIKOS, AND M. WELLER.
A Polynomial-time Algorithm for Outerplanar Diameter Improvement.
In Proc. of the 10th International Computer Science Symposium in Russia (CSR), volume 9139 of LNCS, pages 123-142, Listvyanka, Russia, July 2015.
- [C33] S. OUM, E. KIM, C. PAUL, I. SAU, AND D. M. THILIKOS.
An FPT 2-Approximation for Tree-Cut Decomposition. *In Proc. of the 13th Workshop on Approximation and Online Algorithms (WAOA), volume 9499 of LNCS, pages 35-46, Patras, Greece, September 2015.*
- [C34] D. CHATZIDIMITRIOU, J.-F. RAYMOND, I. SAU, AND D. M. THILIKOS.
An $O(\log \text{OPT})$ -approximation for Covering/Packing minor models of θ_r .
In Proc. of the 13th Workshop on Approximation and Online Algorithms (WAOA), volume 9499 of LNCS, pages 122-132, Patras, Greece, September 2015.
- [C35] E. KIM, C. PAUL, I. SAU, AND D. M. THILIKOS.
Parameterized Algorithms for Min-Max Multiway Cut and List Digraph Homomorphism.
In Proc. of the 10th International Symposium on Parameterized and Exact Computation (IPEC), volume 43 of LIPIcs, pages, 78-89, Patras, Greece, September 2015.
- [C36] J. BASTE, C. PAUL, I. SAU, AND C. SCORNAVACCA.
Efficient FPT algorithms for (strict) compatibility of unrooted phylogenetic trees.
In Proc. of the 11th International Conference on Algorithmic Aspects of Information and Management (AAIM), volume 9778 of LNCS, pages 53-64, Bergamo, Italy, July 2016.
- [C37] D. GÖZÜPEK, S. ÖZKAN, C. PAUL, I. SAU, AND M. SHALOM.
Parameterized complexity of the MINCCA problem on graphs of bounded decomposability.
In Proc. of the 42nd International Workshop on Graph-Theoretic Concepts in Computer Science (WG), volume 9941 of LNCS, pages 195-206, Istanbul, Turkey, June 2016.
- [C38] S. R. ALVES, K. K. DABROWSKI, L. FARIA, S. KLEIN, I. SAU, AND U. S. SOUZA.
On the (parameterized) complexity of recognizing well-covered (r, ℓ) -graphs.
In Proc. of the 10th International Conference on Combinatorial Optimization and Applications (COCO), volume 10043 of LNCS, pages 423-437, Hong Kong, China, December 2016.
- [C39] J. BASTE, M. NOY, AND I. SAU.
On the number of labeled graphs of bounded treewidth.

- In Proc. of the 43rd International Workshop on Graph-Theoretic Concepts in Computer Science (WG), volume 10520 of LNCS, pages 88-99, Eindhoven, The Netherlands, June 2017.*
- [C40] J. BASTE, D. RAUTENBACH, AND I. SAU.
 Uniquely restricted matchings and edge colorings.
In Proc. of the 43rd International Workshop on Graph-Theoretic Concepts in Computer Science (WG), volume 10520 of LNCS, pages 100-112, Eindhoven, The Netherlands, June 2017.
- [C41] N. COHEN, F. HAVET, D. MAZAURIC, I. SAU, AND R. WATRIGANT.
 Complexity Dichotomies for the Minimum \mathcal{F} -Overlay Problem.
In Proc. of the 28th International Workshop on Combinatorial Algorithms (IWOCA), volume 10765 of LNCS, pages 116-127, Newcastle, Australia, July 2017.
- [C42] J. ARAÚJO, J. BASTE, AND I. SAU.
 Ruling out FPT algorithms for Weighted Coloring on forests.
In Proc. of the IX Latin and American Algorithms, Graphs and Optimization Symposium (LAGOS), volume 62 of ENDM, pages 195-200, Marseille, France, September 2017.
- [C43] L. FARIA, S. KLEIN, I. SAU, U. S. SOUZA, AND R. SUCUPIRA.
 Maximum Cuts in Edge-colored Graphs.
In Proc. of the IX Latin and American Algorithms, Graphs and Optimization Symposium (LAGOS), volume 62 of ENDM, pages 87-92, Marseille, France, September 2017.
- [C44] M. BOUGERET AND I. SAU.
 How much does a treedepth modulator help to obtain polynomial kernels beyond sparse graphs?
In Proc. of the 12th International Symposium on Parameterized and Exact Computation (IPEC), volume 89 of LIPIcs, pages 10:1-10:13, Vienna, Austria, September 2017.
- [C45] J. BASTE, D. GÖZÜPEK, C. PAUL, I. SAU, M. SHALOM, AND D. M. THILIKOS.
 Parameterized complexity of finding a spanning tree with minimum reload cost diameter.
In Proc. of the 12th International Symposium on Parameterized and Exact Computation (IPEC), volume 89 of LIPIcs, pages 3:1-3:12, Vienna, Austria, September 2017.
- [C46] J. BASTE, I. SAU AND D. M. THILIKOS.
 Optimal algorithms for hitting (topological) minors on graphs of bounded treewidth.
In Proc. of the 12th International Symposium on Parameterized and Exact Computation (IPEC), volume 89 of LIPIcs, pages 4:1-4:12, Vienna, Austria, September 2017.
- [C47] J. ARAÚJO, V. A. CAMPOS, A. K. MAIA, I. SAU, AND A. SILVA.
 On the complexity of finding internally vertex-disjoint long directed paths.
In Proc. of the 13th Latin American Theoretical INformatics Symposium (LATIN), volume 10807 of LNCS, pages 66-79, Buenos Aires, Argentina, April 2018.
- [C48] J. ARAÚJO, V. A. CAMPOS, C. V. G. C. LIMA, V. F. DOS SANTOS, I. SAU, AND A. SILVA.
 Dual parameterization of Weighted Coloring.
In Proc. of the 13th International Symposium on Parameterized and Exact Computation (IPEC), volume 115 of LIPIcs, pages 12:1-12:14, Helsinki, Finland, August 2018.
- [C49] J. BASTE, I. SAU, AND D. M. THILIKOS.
 A complexity dichotomy for hitting small planar minors parameterized by treewidth.
In Proc. of the 13th International Symposium on Parameterized and Exact Computation (IPEC), volume 115 of LIPIcs, pages 2:1-2:13, Helsinki, Finland, August 2018.
- [C50] V. A. CAMPOS, R. LOPES, A. K. MAIA, AND I. SAU.
 Adapting the Directed Grid Theorem into an FPT Algorithm.
In Proc. of the X Latin and American Algorithms, Graphs and Optimization Symposium (LAGOS), volume 346 of ENTCS, pages 229-240, Belo Horizonte, Brazil, June 2019.

- [C51] G. C. M. GOMES AND I. SAU.
Finding cuts of bounded degree: complexity, FPT and exact algorithms, and kernelization.
In Proc. of the 14th International Symposium on Parameterized and Exact Computation (IPEC), volume 148 of LIPIcs, pages 19:1–19:15, Munich, Germany, September 2019.
- [C52] J. BASTE, I. SAU, AND D. M. THILIKOS.
A complexity dichotomy for hitting connected minors on bounded treewidth graphs: the chair and the banner draw the boundary.
In Proc. of the 31st Annual ACM-SIAM Symposium on Discrete Algorithms (SODA), pages 951–970, Salt Lake City, Utah, U.S., January 2020.
- [C53] M. BOUGERET, B. M. P. JANSEN, AND I. SAU.
Bridge-Depth Characterizes which Structural Parameterizations of Vertex Cover Admit a Polynomial Kernel.
In Proc. of the 47th International Colloquium on Automata, Languages and Programming (ICALP), volume 168 of LIPIcs, pages 16:1–16:19, held online, July 2020.
- [C54] I. SAU, G. STAMOULIS, AND D. M. THILIKOS.
An FPT-algorithm for recognizing k -apices of minor-closed graph classes.
In Proc. of the 47th International Colloquium on Automata, Languages and Programming (ICALP), volume 168 of LIPIcs, pages 95:1–95:20, held online, July 2020.
- [C55] R. BELMONTE AND I. SAU.
On the complexity of finding large odd induced subgraphs and odd colorings.
In Proc. of the 46th International Workshop on Graph-Theoretic Concepts in Computer Science (WG), volume 12301 of LNCS, pages 67–79, held online, June 2020.
- [C56] R. LOPES AND I. SAU.
A relaxation of the Directed Disjoint Paths problem: a global congestion metric helps.
In Proc. of the 45th International Symposium on Mathematical Foundations of Computer Science (MFCS), volume 170 of LIPIcs, pages 68:1–68:15, held online, August 2020.
- [C57] I. SAU AND U. S. SOUZA.
Hitting forbidden induced subgraphs on bounded treewidth graphs.
In Proc. of the 45th International Symposium on Mathematical Foundations of Computer Science (MFCS), volume 170 of LIPIcs, pages 82:1–82:15, held online, August 2020.
- [C58] P. T. LIMA, V. F. DOS SANTOS, I. SAU, AND U. S. SOUZA.
Reducing graph transversals via edge contractions.
In Proc. of the 45th International Symposium on Mathematical Foundations of Computer Science (MFCS), volume 170 of LIPIcs, pages 64:1–64:15, held online, August 2020.
- [C59] L. KEILER, C. V. G. C. LIMA, A. K. MAIA, R. SAMPAIO, AND I. SAU.
Target set selection with maximum activation time.
To appear *In Proc. of the XI Latin and American Algorithms, Graphs and Optimization Symposium (LAGOS), São Paulo, Brazil, May 2021.*

Book chapters and proceedings

- [B1] T. CINKLER, D. COUDERT, M. FLAMMINI, G. MONACO, L. MOSCARDELLI, X. MUÑOZ, I. SAU, M. SHALOM, AND S. ZAKS.
Graphs and Algorithms in Communication Networks - Studies in Broadband, Optical, Wireless and Ad Hoc Networks. *Chapter: Traffic Grooming: Combinatorial Results and Practical Resolutions.*
EATCS Texts in Theoretical Computer Science, Springer. December 2009.
- [B2] I. SAU AND J. ŽEROVNIK.
Graphs and Algorithms in Communication Networks - Studies in Broadband, Optical, Wire-

less and Ad Hoc Networks. *Chapter: Permutation Routing and (ℓ, k) -routing on Plane Grids. EATCS Texts in Theoretical Computer Science, Springer. December 2009.*

- [B3] I. SAU AND D. M. THILIKOS.
Proceedings of the 45th International Workshop on Graph-Theoretic Concepts in Computer Science, WG 2019, Vall de Núria, Spain, June 19-21, 2019, Revised Papers.
Lecture Notes in Computer Science 11789, Springer, ISBN 978-3-030-30785-1, 2019.

National conferences

- [N1] O. AMINI, S. PÉRENNES, AND I. SAU.
Hardness of Approximating the Traffic Grooming.
In Proc. of 9es Rencontres Francophones sur les Aspects Algorithmiques des Télécommunications (AlgoTel), Ile d'Oléron, France, May 2007.
- [N2] J. ARAÚJO, C. LINHARES-SALES, AND I. SAU.
Weighted Coloring on P_4 -sparse Graphs.
In Proc. of 11es Journées Doctorales en Informatique et Réseaux (JDIR), Sophia Antipolis, France, March 2010.
- [N3] L. FARIA, S. KLEIN, I. SAU, U. S. SOUZA, AND R. SUCUPIRA.
Finding cuts in edge-colored graphs.
In XXXVI Congresso da Sociedade Brasileira de Computação - Encontro de Teoria da Computação (CSBC-ETC), Porto Alegre, Brazil, July 2016, and XLVIII Simpósio Brasileiro de Pesquisa Operacional (SBPO), Vitória, Brazil, September 2016.

Submitted to journal

- [S1] L. KEILER, C. V. G. C. LIMA, A. K. MAIA, R. SAMPAIO, AND I. SAU.
Target set selection with maximum activation time.
- [S2] M. BOUGERET, B. M. P. JANSEN, AND I. SAU.
Bridge-depth characterizes which structural parameterizations of Vertex Cover admit a polynomial kernel.
- [S3] V. A. CAMPOS, R. LOPES, A. K. MAIA, AND I. SAU.
Adapting the Directed Grid Theorem into an FPT algorithm.
- [S4] I. SAU, G. STAMOULIS, AND D. M. THILIKOS.
An accurate view of the Flat Wall Theorem.
- [S5] I. SAU, G. STAMOULIS, AND D. M. THILIKOS.
 k -apices of minor-closed graph classes. I. Bounding the obstructions.
- [S6] I. SAU, G. STAMOULIS, AND D. M. THILIKOS.
 k -apices of minor-closed graph classes. II. Parameterized algorithms.
- [S7] J. BASTE, I. SAU, AND D. M. THILIKOS.
Hitting minors on bounded treewidth graphs. IV. An optimal algorithm.

Submitted to conference

- [s1] J. ARAÚJO, M. BOUGERET, V. A. CAMPOS, AND I. SAU.
Kernelization of Maximum Minimal Vertex Cover.

- [s2] J. ARAÚJO, M. BOUGERET, V. A. CAMPOS, AND I. SAU.
On the complexity of computing maximum minimal blocking and hitting sets.

Articles in preparation

- [P1] P. GOLOVACH, F. FOMIN, I. SAU, G. STAMOULIS, AND D. M. THILIKOS.
An algorithmic meta-theorem for graph modification to FOL properties.
- [P2] S. BESSY, F. HOERSCH, A. K. MAIA, D. RAUTENBACH, AND I. SAU.
FPT algorithms for finding arc-disjoint k -safe arborescences and branching flows.
- [P3] I. SAU, C. PAUL, G. STAMOULIS, AND D. M. THILIKOS.
A survey on graph width parameters.

SUPERVISED STUDENTS

- 03/2012-08/2012 **Valentin Garnero (internship M2)**: Polynomial kernels for variants of domination problems on planar graphs.
- 02/2013-07/2013 **Julien Baste (internship M2)**: The role of planarity in connectivity problems parameterized by treewidth.
- 02/2014-07/2014 **Henri Perret du Cray (internship M2)**: FPT algorithms and kernels on graphs without induced subgraphs.
- 10/2012-07/2016 **Valentin Garnero (Ph.D, co-supervised with Christophe Paul)**: (Méta)-noyaux constructifs et linéaires dans les graphes peu denses.
- 09/2014-09/2017 **Julien Baste (Ph.D, co-supervised with Dimitrios M. Thilikos)**: Treewidth: algorithmic, combinatorial and practical aspects.
- 09/2018-03/2019 **Guilherme Gomes (Ph.D internship, advised in Brazil by Vinícius F. dos Santos)**: Generalizations of matching cuts in graphs.
- 09/2018-08/2019 **Raul Lopes (Ph.D internship, advised in Brazil by Victor A. Campos)**: On the tractability of the DIRECTED DISJOINT PATHS problem.
- 02/2020-06/2020 **Nour Karnib (internship M2, co-supervised with Marin Bougeret)**: Bridge-depth: combinatorial and algorithmic properties.
- 10/2020-09/2023 **Giannos Stamoulis (Ph.D, co-supervised with Dimitrios M. Thilikos)**: Algorithmic meta-theorems for graph modification problems.

PROJECT MANAGEMENT

- 2015-2016 Coordinator of an awarded bilateral research project funded by CNRS and TUBITAK between France and Turkey, entitled “*Reload Cost Concept in Graph Theory: A Combinatorial Analysis*”. Grant 114E731. Funded 4k€ to cover travel expenses.
- 2016 Recipient of 10k€ from the Université de Montpellier (*Soutien à la Recherche 2016*) for the personal research project PASTA (“*Parameterized Algorithms for Structured graphs*”).
- 10/2021-10/2025 Coordinator of the accepted ANR JCJC projet ELiT (“*Exploring the Limits of Tractability*”). Funded 169k€, mostly covering a Ph.D student and travel costs.

AWARDS, GRANTS AND SCHOLARSHIPS

2000	Got accepted to a special plan for high performance students of Universitat Politècnica de Catalunya (10 students were selected all over Spain), to study in parallel the degrees of Mathematics and Telecommunications Engineering.
2000–2001	First year of university funded by the Spanish government for having the highest grades in my secondary school.
2/2005–7/2005	Research Support Scholarship at MA4 ¹³ of UPC (Barcelona, Catalunya). Grant of <i>Ministerio de Ciencia e Innovación</i> of Spain. Topic: <i>Graph Theory and Optical Networks</i> , under the direction of Xavier Muñoz.
2005–2006	Recipient of an Erasmus European grant to study in Nice, France.
2006–2009	Recipient of a French Ph.D grant BDI (joint of CNRS and région PACA).
2006–2009	Recipient of French grant RECHERCHE 06 to promote student’s mobility.
2006–2008	Recipient of 3 grants of European Project COST 293 to perform Short Term Scientific Missions in Slovenia (September 2006) and Israel (June 2007 and May 2008).
6/2009	Recipient of the BEST STUDENT PAPER AWARD of WG’09 for publication [C12].
11/2009	Recipient of a postdoctoral grant in the Computer Science Department of the Technion (Haifa, Israel).
7/2010	Recipient of the BEST PAPER AWARD of TRACK C OF ICALP’10 for publication [C17].
2012–2015	Recipient of the PRIME D’EXCELLENCE SCIENTIFIQUE (PES) of the CNRS.
2016–2017	Awarded a Visiting Professor position at Department of Mathematics of Universidade Federal do Ceará (Fortaleza, Brazil) for the period 8/2016–8/2017.
2017	Recipient of 1.250€ from the “ <i>Exploration Japon 2017</i> ” program to carry out a research visit in Tokyo, Japan.
12/2019	Recipient of a scholarship from the Brazilian CAPES-PRINT agency to spend one month as Visiting Professor in Universidade Federal Fluminense (UFF), Niterói, Brazil.
2/2020	Recipient of a scholarship from the Brazilian CAPES-PRINT agency to spend one month as Visiting Professor in Universidade Federal do Ceará (UFC), Fortaleza, Brazil.

TEACHING ACTIVITY

During my Ph.D (2006–2009) I was *Moniteur* (corresponding to Junior Assistant Professor) at Université de Nice-Sophia Antipolis:

¹³MA4: Departament de Matemàtica Aplicada 4 de la UPC

- 2006/2007 **Programmation Répartie en Java (Distributed Programming in Java).**
IUT UNSA, Bachelor in Computer Science, 2nd year - 64h.
- 2007/2008 **Programmation concurrente en JAVA (Concurrent programming in JAVA).**
IUT UNSA, Bachelor in Computer Science, 2nd year - 21h.
Algorithmique et complexité (Algorithms and complexity).
IUT UNSA, Bachelor in Computer Science, 3rd year - 49h.
Mathématiques discrètes et optimisation (Discrete maths and optimization).
IUT UNSA, Bachelor in Computer Science, 3rd year - 21h.
- 2008/2009 **Bases algorithmiques (Algorithmic principles).**
IUT UNSA, Bachelor in Computer Science, 3rd year - 37h.
- Courses I have taught after my Ph.D:
- 2011/2012 **Algorithmes élégants.**
Module de l'École Doctorale I2S, Université de Montpellier 2 - 12h.
- 2012/2013 **Complexité et algorithmes paramétrés.**
Cours de M2 Informatique, Université de Montpellier 2 - 10h.
- 2013/2014 **Algorithmes élégants.**
Module de l'École Doctorale I2S, Université de Montpellier 2 - 11h.
- 2015/2016 **Graphes, algorithmique et complexité.**
Cours de M2 Informatique, Université de Montpellier - 9h.
- 2016/2017 **Complexidade parametrizada.**
Curso de pós-graduação, Departamento de Matemática, Universidade Federal do Ceará, Fortaleza, Brazil - 96h.
- 2017/2018 **Introdução à complexidade parametrizada.**
Curso na Escola de Verão de Matemática, Departamento de Matemática, Universidade Federal do Ceará, Fortaleza, Brazil - 20h.
- 2018/2019 **Introduction aux noyaux.**
Cours de M2 Informatique, Université de Montpellier - 3h.
- Algoritmos para obtenção de núcleos em Complexidade Parametrizada.**
Curso no I Fortaleza Workshop em Combinatória (ForWorC), Universidade Federal do Ceará, Fortaleza, Brazil - 6h.
- 2019/2020 **Introduction aux noyaux.**
Cours de M2 Informatique, Université de Montpellier - 9h.
- Algoritmos para obtenção de núcleos.**
Curso no Instituto de Matemática e Estatística da Universidade Federal Fluminense, Niterói, Brazil - 8h.
- 2020/2021 **Introduction aux algorithmes FPT.**
Cours de M2 Informatique, Université de Montpellier - 12h.

COMMITTEES AND ADMINISTRATIVE DUTIES

Editorship

- Editor of the Discrete Algorithms section of *Discrete Mathematics & Theoretical Computer Science* (DMTCS) since July 2018.

Committees of conferences and workshops

- Program Committee member of SIROCCO'12 (web).
- Program Committee member of AlgoTel'13 (web).
- Program Committee member of AlgoTel'14 (web).
- Program Committee member of JMDA'16 (web).
- Program Committee member of WG'18 (web).
- Program Committee member of JMDA'18 (web).
- Program Committee member of MFCS'19 (web).
- Co-chair and Program Committee member of WG'19 (web).
- Steering Committee member of WG (International Workshop on Graph-Theoretic Concepts in Computer Science) since June 2019.
- Program Committee member of IPEC'21 (web).

Administrative responsibilities

- Responsible of the weekly research seminar of our group **ALGCo** since April 2013 until July 2016 (web).
- Member of the “Commission of Section 27 (MIPS)” of Université de Montpellier since June 2017.
- Member of the commission to hire an Associate Professor (AG-185/749) at Departament de Matemàtiques of Universitat Politècnica de Catalunya, Barcelona, February-March 2018.

Organization of workshops and seminars

- Organizing Committee of AdHocNow'08, 7th International Conference on AD-HOC Networks, Sophia Antipolis, France, September 2008 (www-sop.inria.fr/mascotte/adhocnow).
- Organizing Committee of JGA'08, Journées Graphes et Algorithmes, Sophia Antipolis, France, November 2008 (www-sop.inria.fr/mascotte/seminaires/JGA08).
- General co-chair of IMAGINE'09, 3rd International workshop on Mobility, Algorithms, Graph theory In dynamic NETWORKS, Piran, Slovenia, May 2009.
- Organizing Committee of WG'10, 36th International Workshop on Graph Theoretic Concepts in Computer Science, Zarós, Greece, June 2010 (web).
- Co-organizer of the 1st JCALM (Journées Combinatoire et Algorithmes du Littoral Méditerranéen) in Barcelona, June 2011 (web).
- Co-organizer of Journées AGAPE on Parameterized Complexity and Exact Algorithms, Montpellier, France, February 2012 (web).
- Co-organizer of the 2nd JCALM (Journées Combinatoire et Algorithmes du Littoral Méditerranéen) in Barcelona, October 2013 (web).
- Co-organizer of 7th GROW, Aussois, France, October 2015 (web).
- Co-organizer of the 3rd JCALM (Journées Combinatoire et Algorithmes du Littoral Méditerranéen) in Barcelona, January 2018 (web).
- Co-organizer of 45th WG, Vall de Núria, Catalonia, June 2019 (web).
- Chair and co-organizer of 11th ICGT, Montpellier, France, July 2022.

Ph.D reviewing and committee membership in defenses

- Substitute committee member (eventually not required) of the Ph.D defense of Guillem Perarnau, Universitat Politècnica de Catalunya, Barcelona, Catalunya, October 2013.
- Reviewer of the Ph.D of Miguel H. Camelo, Universitat de Girona, Catalunya, October 2014.

- Committee member (as advisor) of the Ph.D defense of Valentin Garnero, Université de Montpellier, Montpellier, France, July 2016.
- Reviewer and committee member of the Ph.D of Rubens Sucupira, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil, January 2017.
- Reviewer and committee member of the Ph.D of Thiago Marcilon, Universidade Federal do Ceará, Fortaleza, Brazil, February 2017.
- Committee member (as advisor) of the Ph.D defense of Julien Baste, Université de Montpellier, Montpellier, France, September 2017.
- Reviewer and committee member of the pre-defense (“qualificação”) of the Ph.D of Guilherme Gomes, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, February 2018.
- Reviewer and committee member of the Ph.D of Guilherme Gomes, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, June 2019.
- Reviewer and committee member of the Ph.D of Pierre Bergé, LRI, Université Paris Sud, Paris, France, December 2019.
- Reviewer and committee member of the Ph.D of Ioannis Katsikarelis, LAMSADE, Université Paris-Dauphine, Paris, France, December 2019.
- Committee member of the Master defense of Pedro Arraes, Universidade Federal do Ceará, Fortaleza, Brazil, February 2020.

Refereeing of international research projects

- Funding scheme PRELUDIUM, National Science Centre of Poland, March 2016.
- Vidi grant, Netherlands Organisation for Scientific Research (NWO), December 2016.
- Czech Science Foundation (Grantová Agentura České Republiky – GACR), July 2018.
- Comisión de Ciencias Físicas, Matemáticas y Astronómicas del Fondo para la Investigación Científica y Tecnológica (FONCyT) de la República Argentina, October 2020.

SELECTED RESEARCH VISITS

- 9/2006 **Department of Theoretical Computer Science of IMFM, Ljubljana, Slovenia.**
Visiting Janez Žerovnik (1 month).
- 6/2007 **Computer Science Department of Technion, Haifa, Israel.**
Visiting Shmuel Zaks and Mordechai Shalom (1 month).
- 12/2007 **Department of Theoretical Computer Science of IMFM, Ljubljana, Slovenia.**
Visiting Janez Žerovnik (2 weeks).
- 2-3/2008 **Departamento de Computação da Universidade Federal do Ceará (UFC), Fortaleza, Brazil.**
Visiting Cláudia Linhares-Sales (6 weeks).
- 6/2008 **Computer Science Department of Technion, Haifa, Israel.**
Visiting Shmuel Zaks and Mordechai Shalom (1 month).
- 11/2008 **Department of Mathematics of NKU, Athens, Greece.**
Visiting Dimitrios M. Thilikos (2 weeks).
- 12/2008 **Department of Theoretical Computer Science of IMFM, Ljubljana, Slovenia.**
Visiting Janez Žerovnik (2 weeks).
- 5/2009 **Algorithms Research Group of University of Bergen, Norway.**
Visiting Isolde Adler, Frederic Dorn, and Fedor Fomin (1 week).
- 5/2010 **School of Computer Science of McGill University, Montréal, Canada.**
Visiting Bruce Reed (1 month).

- 11/2010 **Department of Mathematics of NKU, Athens, Greece.**
Visiting Dimitrios M. Thilikos (1 week).
- 12/2010 **Department of Computer Science of Charles University, Prague, Czech Republic.**
Visiting Daniel Král' (2 weeks).
- 1/2011 **Faculty of Mathematics and Computer Science of Weizmann Institute of Science, Rehovot, Israel.**
Visiting David Peleg (2 weeks).
- 3/2012 **Département d'Informatique of Université Libre de Bruxelles, Brussels, Belgium.**
Visiting Gwenaël Joret and Samuel Fiorini (1 week).
- 4/2012 **Instituto de Ciencias Matemáticas, Madrid, Spain.**
Visiting Juanjo Rué (1 week).
- 9/2012 **Department of Mathematics of University of Pilsen, Czech Republic.**
Visiting Daniel Král' and Thomas Kaiser (1 week).
- 10/2012 **Algorithms Research Group of University of Bergen, Norway.**
Visiting Pinar Heggernes and Pim van 't Hof (1 week).
- 12/2014 **Departamento de Ciência da Computação da Universidade Federal do Rio de Janeiro (UFRJ), Brazil.**
Visiting Sulamita Klein and Luerbio Faria (4 weeks).
- 2/2015 **Departamento de Computação da Universidade Federal do Ceará (UFC), Fortaleza, Brazil.**
Visiting Júlio Araújo and Karol Maia (4 weeks).
- 5/2015 **Departament de Matemàtica Aplicada II of Universitat Politècnica de Catalunya (UPC), Barcelona, Catalunya.**
Visiting Marc Noy (1 week).
- 6/2015 **Computer Engineering Department of Gebze Technical University, Istanbul, Turkey.**
Visiting Didem Gözüpek, Sibel Ökzan, and Mordechai Shalom (1 week).
- 1/2016 **Departamento de Ciência da Computação da Universidade Federal do Rio de Janeiro (UFRJ), Brazil.**
Visiting Sulamita Klein, Luerbio Faria, and Uéverton S. Souza (3 weeks).
- 6/2016 **COATI team, INRIA Sophia Antipolis, France.**
Visiting Frédéric Havet and Dorian Mazauric (1 week).
- 6/2016 **Computer Engineering Department of Gebze Technical University, Istanbul, Turkey.**
Visiting Didem Gözüpek and Mordechai Shalom (1 week).
- 2016-2017 **Departamento de Matemática da Universidade Federal do Ceará (UFC), Fortaleza, Brazil.**
Position of Visiting Professor (1 year).
- 12/2017 **University of Electro-Communications, Chofu, Tokyo, Japan.**
Visiting Rémy Belmonte (2 weeks).
- 1/2018 **Departamento de Matemática da Universidade Federal do Ceará (UFC), Fortaleza, Brazil.**
Visiting the ParGO research team (3 weeks).
- 1/2018 **Departamento de Ciência da Computação da Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil.**
Visiting Vinícius F. dos Santos (1 week).
- 2/2019 **Departamento de Matemática da Universidade Federal do Ceará (UFC), Fortaleza, Brazil.**
Visiting the ParGO research team (2 weeks).
- 6/2019 **Departamento de Ciência da Computação da Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil.**
Visiting Vinícius F. dos Santos (1 week).

- 7/2019 **Departamento de Matemática da Universidade Federal do Ceará (UFC), Fortaleza, Brazil.**
Visiting the ParGO research team (2 weeks).
- 12/2019 **Instituto de Computação da Universidade Federal Fluminense (UFF), Niterói, Rio de Janeiro, Brazil.**
Visiting Uéverton S. Souza and Simone Dantas (4 weeks).
- 1/2020 **University of Electro-Communications, Chofu, Tokyo, Japan.**
Visiting Rémy Belmonte (3 weeks).
- 2/2020 **Departamento de Matemática da Universidade Federal do Ceará (UFC), Fortaleza, Brazil.**
Visiting the ParGO research team (4 weeks).

SELECTED TALKS

Invited talks at international conferences

- 11/2018 **Efficient algorithms on graphs of bounded treewidth.**
20ⁱèmes Journées Graphes et Algorithmes (JGA 2018), Grenoble, France
(webpage here).
- 6/2019 **Efficient algorithms parameterized by treewidth.**
X Latin and American Algorithms, Graphs and Optimization Symposium (LAGOS 2019), Belo Horizonte, Brazil (webpage here).
- 6/2020 **FPT algorithms for hitting forbidden minors.**
20th Haifa Workshop on Graph Theory, Combinatorics and Algorithms, held online (webpage here). *Uri N. Peled Memorial Lecture.*

Other research talks

- 6/06 **Traffic grooming in optical networks.**
Seminar of Graph Theory, Combinatorics and Applications of UPC, Barcelona, Catalunya.
- 6/2006 **Traffic grooming in bidirectional WDM ring networks.**
Presentation of a paper in ICTON, Nottingham, UK.
- 4/2007 **Optimal permutation routing on mesh networks.**
Presentation of a paper in INOC, Spa, Belgium.
- 5/2007 **Hardness of approximating the traffic grooming problem.**
Presentation of a paper in AlgoTel, Ile d'Oleron, France.
- 4/08 **Maximum Degree-Bounded Connected Subgraph: Hardness and Approximation.**
Seminar in MASCOTTE project, Sophia-Antipolis, France.
- 6/2008 **Maximum degree-bounded connected subgraph: hardness and approximation.**
Seminar in the Computer Science Department of Technion, Haifa, Israel.
- 7/2008 **Traffic grooming in unidirectional WDM rings with bounded-degree request graph.**
Presentation of a paper in WG, Durham University, U.K.
- 9/2008 **Degree-constrained subgraph problems: hardness and approximation.**
Presentation of a paper in ALGO/WAOA, Universität Karlsruhe, Germany.
- 11/2008 **Degree-constrained subgraph problems: hardness and approximation.**
Seminar in the Department of Mathematics of NKU, Athens, Greece.
- 12/2008 **Degree-constrained subgraph problems: hardness and approximation.**
Seminar in the Department of Mathematics of IMFM, Ljubljana, Slovenia.

- 3/2009 **Subexponential parameterized algorithms for bounded-degree connected subgraph problems on planar graphs.**
Presentation of a paper in DIMAP AGT, University of Warwick, U.K.
- 5/2009 **Designing hypergraph layouts for GMPLS routing strategies.**
Presentation of a paper in SIROCCO, Piran, Slovenia.
- 6/2009 **On self-duality of branchwidth in graphs of bounded genus.**
Presentation of a paper in CTW, Paris, France.
- 6/2009 **Graph partitioning and traffic grooming with bounded degree request graph.**
Presentation of a paper in WG, Montpellier, France.
- 7/09 **Edge-partitioning regular graphs.**
Seminar in MASCOTTE project, Sophia-Antipolis, France.
- 10/2009 **Optimization in graphs under degree constraints. Application to telecommunication networks.**
Ph.D defense, Sophia Antipolis, France.
- 10/2009 **Optimization in graphs under degree constraints. Application to telecommunication networks.**
Seminar of Graph Theory, Combinatorics and Applications of UPC, Barcelona, Catalunya.
- 3/2010 **Edge-partitioning regular graphs, with applications to traffic grooming.**
Combinatorics Seminar of the Mathematics Department of the Technion, Haifa, Israel.
- 6/2010 **Dynamic programming for graphs on surfaces.**
In the Research Seminar in Discrete and Computational Geometry, Ben Gurion University of the Negev, Be'er Sheva, Israel.
- 10/2010 **Dynamic programming for graphs on surfaces.**
In the 2nd Workshop on Graph Decompositions, CIRM, Marseille, France.
- 11/2010 **Dynamic programming for graphs on surfaces.**
Seminar in the Department of Mathematics of NKU, Athens, Greece.
- 1/2011 **On approximating the d -girth of a graph.**
Presentation of a paper in SOFSEM, Novy Smokovec, Slovakia.
- 2/2011 **Single-exponential parameterized algorithms: good and bad news.**
Lecture in Journées AGAPE, Montpellier, France.
- 3/2011 **Dynamic programming in sparse graphs.**
Seminar of Graph Theory, Combinatorics and Applications of UPC, Barcelona, Catalunya.
- 3/2011 **Traffic grooming in bidirectional WDM ring networks.**
Talk in the celebration of Jean-Claude Bermond's EADS 2010 prize, Montpellier, France.
- 9/2011 **Hitting and harvesting pumpkins.**
Presentation of a paper in ESA, Saarbrücken, Germany.
- 9/2011 **Parameterized domination in circle graphs.**
Talk in GROW workshop, Daejeon, South Korea.
- 3/2012 **Dynamic programming in sparse graphs.**
Seminar in Université Libre de Bruxelles (ULB), Brussels, Belgium.
- 10/2012 **Parameterized domination in circle graphs.**
Seminar in the Algorithms Research Group, University of Bergen, Norway.
- 1/2013 **Optimal Erdős-Pósa property for pumpkins.**
Talk in Congreso de la Real Sociedad Matemática Española, Santiago de Compostela, Spain.
- 1/2013 **Linear kernels on graphs excluding topological minors.**
Talk in the ANR AGAPE meeting, Université d'Orléans, France.
- 2/2013 **Linear kernels and single-exponential algorithms via protrusion decompositions.**
Seminar of Graph Theory, Combinatorics and Applications of UPC, Barcelona, Catalunya.

- 6/2013 **Optimal Erdős-Pósa property for pumpkins.**
Talk in the Joint Mathematical Conference of Catalan, Slovenian, Austrian, Slovak and Czech Mathematical Societies (CSASC), Koper, Slovenia.
- 10/2013 **Bidimensionality theory.**
Tutorial in the JCALM workshop, Barcelona, Catalunya.
- 6/2014 **Programmation dynamique dans les graphes peu denses.**
Talk in the “Journée scientifique du LIRMM”, Montarnaud, France.
- 10/2014 **Linear kernels and single-exponential algorithms via protrusion decompositions.**
Seminar in Université Libre de Bruxelles (ULB), Brussels, Belgium.
- 11/2014 **On the Erdős-Pósa property for minors of graphs.**
Talk in Barcelona Mathematical Days, Institut d’Estudis Catalans, Barcelona, Catalunya.
- 12/2014 **Linear kernels and single-exponential algorithms via protrusion decompositions.**
Talk in Seminário de Grafos e Algoritmos, UFRJ, Rio de Janeiro, Brazil.
- 1/2015 **FPT algorithm for a generalized cut problem and some applications.**
Séminaire ALGCo, LIRMM, Montpellier, France.
- 1/2015 **FPT algorithm for a generalized cut problem and some applications.**
Talk in Rencontres Internationales sur les méthodes de décomposition de graphes, CIRM, Marseille, France.
- 1/2015 **FPT algorithm for a generalized cut problem and some applications.**
Seminário ParGO, Universidade Federal do Ceará, Fortaleza, Brazil.
- 5/2015 **The List Allocation problem and some of its applications in parameterized algorithms.**
Seminar of Graph Theory, Combinatorics and Applications of UPC, Barcelona, Catalunya.
- 6/2015 **On the complexity of computing the k -restricted edge-connectivity of a graph.**
Séminaire ALGCo, LIRMM, Montpellier, France.
- 6/2015 **On the complexity of computing the k -restricted edge-connectivity of a graph.**
Presentation of a paper in WG, Munich, Germany.
- 3/2016 **Noyaux (presque) linéaires dans les graphes d’expansion bornée et “nowhere dense”.**
Talk in the JCALM workshop, Montpellier, France.
- 5/2016 **The number of graphs of bounded treewidth.**
Séminaire COATI, Sophia Antipolis, France.
- 9/2016 **The number of graphs of bounded treewidth.**
Seminário ParGO, UFC, Universidade Federal do Ceará, Fortaleza, Brazil.
- 6/2017 **Finding subdivisions of spindles on digraphs.**
Seminário ParGO, UFC, Universidade Federal do Ceará, Fortaleza, Brazil.
- 9/2017 **Ruling out FPT algorithms for Weighted Coloring on forests.**
Presentation of a paper in LAGOS, Marseille, France.
- 10/2017 **Finding subdivisions of spindles on digraphs.**
Séminaire ALGCo, LIRMM, Montpellier, France.
- 2/2018 **Finding subdivisions of spindles on digraphs.**
Seminário de Teoria, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil.
- 2/2018 **Introdução à complexidade parametrizada.**
Palestra na Escola de Verão em Computação, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil.
- 6/2018 **Fast algorithms parameterized by treewidth.**
Talk in ANR ESIGMA meeting, Paris, France.
- 6/2018 **Some contributions to parameterized complexity.**
HDR defense, Montpellier, France.

- 8/2018 **Hitting (topological) minors on bounded treewidth graphs.**
Talk in the Graph Theory Meeting in Nyborg, Denmark.
- 8/2018 **Dual Parameterization of Weighted Coloring.**
Presentation of a paper in IPEC, Helsinki, Finland.
- 1/2019 **Hitting minors on bounded treewidth graphs.**
Talk in Dagstuhl seminar 19041, Dagstuhl, Germany.
- 2/2019 **Hitting minors on bounded treewidth graphs.**
Talk in I Fortaleza Workshop em Combinatória (ForWorC), Fortaleza, Brazil.
- 5/2019 **Algorithmes paramétrés efficaces.**
Présentation publique dans le CIEL (réunion inter-équipes du LIRMM), Montpellier, France.
- 7/2019 **Hitting minors on bounded treewidth graphs.**
Talk at the 1st Joint Meeting Brazil-France in Mathematics, IMPA, Rio de Janeiro, Brazil.
- 9/2019 **Hitting minors on bounded treewidth graphs.**
Talk at the 1st French Norwegian Workshop on Algorithms and Combinatorics (FraNorAC), Montpellier, France.
- 11/2019 **Introduction to parameterized complexity.**
Seminário de Combinatória do IME, UFF, Niterói, Brazil.
- 12/2019 **Efficient algorithms parameterized by treewidth.**
Seminário de Combinatória e Algoritmos do PESC, UFRJ, Rio de Janeiro, Brazil.
- 2/2020 **Introduction to parameterized complexity.**
Seminário na Universidade Federal do Ceará, Fortaleza, Brazil.
- 6/2020 **On the complexity of finding large odd induced subgraphs and odd colorings.**
Séminaire (online) ALGCo, LIRMM, Montpellier, France.
- 6/2020 **On the complexity of finding large odd induced subgraphs and odd colorings.**
Presentation of a paper in WG, held online.
- 8/2020 **Reducing graphs transversals via edge contractions.**
Presentation of a paper in MFCS, held online.
- 9/2020 **On the complexity of finding large odd induced subgraphs and odd colorings.**
Invited online presentation at the virtUMA meeting (Reunión Anual de la Unión Matemática Argentina).
- 10/2020 **Reducing graphs transversals via edge contractions.**
Séminaire ALGCo, LIRMM, Montpellier, France.
- 11/2020 **Reducing graphs transversals via edge contractions.**
Seminário brasileiro online de Grafos, Algoritmos e Combinatória.

JOURNAL AND CONFERENCE REFEREEING

In parenthesis, the number of reviews that I have done for the corresponding venue, whenever it is greater than one.

- **Journals:** Algorithmica (5), Information and Computation, ACM Transactions on Algorithms (2), Discrete Applied Mathematics (19), Theoretical Computer Science (9), Journal of Discrete Algorithms (2), European Journal of Operational Research, Journal of Graph Algorithms and Applications, Networks, European Journal of Combinatorics (2), Discrete Mathematics (2), SIAM Journal on Discrete Mathematics (5), Journal of Combinatorial Optimization (2), Discussiones Mathematicae Graph Theory, Journal of Combinatorial Theory Series B (3), Information Processing Letters, Journal of Computer and System Sciences, Discrete Mathematics & Theoretical Computer Science, Journal of Graph Theory.

- **Conferences:** AlgoTel'08, WG'09, STACS'10, CIAC'10, WG'10 (3), IWOCA'10, ISAAC'10, IPEC'10, WG'11, IWOCA'11, FCT'11, ESA'11, DISC'11, SODA'12, SWAT'12, MFCS'12, IPEC'12, CIAC'13, ICALP'13 (2), AlgoTel'13 (6), WG'13, EuroComb'13, MFCS'13, ESA'13, FCT'13, IPEC'13 (2), STACS'14, IPCO'14, CSR'14 (2), ICALP'14, WG'14, MFCS'14 (2), STACS'15, CIAC'15, WG'15, AlgoTel'15, ESA'15, IPEC'15, LATIN'16, SWAT'16, WG'16, JMDS'16 (3), ESA'16, IWOCA'16, IPEC'16, SODA'17, ICALP'17, WG'17 (2), ESA'17 (2), IPEC'17, SODA'18, STACS'18, ICALP'18 (2), SWAT'18, DMD'18 (4), IPEC'18, STACS'19, WADS'19, MFCS'19 (2), SODA'20, STACS'20 (2), LATIN'20, ESA'20, MFCS'20 (2), STACS'21, WADS'21.

LANGUAGE KNOWLEDGE

- **Catalan:** native.
- **Spanish:** native (yes, all Catalan do speak Spanish perfectly, even if some claim, maliciously, otherwise).
- **English:** proficient.
- **French:** proficient.
- **Portuguese:** proficient.
- **Italian:** fair.

PERSONAL INTERESTS

- Soccer, traveling, Catalan politics, running, mountain biking, swimming, trekking, diving.
- These are some countries (outside Europe) in which I have been traveling around:
U.S., Peru, Cuba, Argentina, Morocco, Israel, Jordan, Brazil, Turkey, Canada, India, South Korea, Senegal, Thailand, Dominican Republic, Russia, Indonesia, Iran, Uruguay, China, Japan, Colombia, Kazakhstan, Kyrgyzstan, Malaysia, Singapore.