

Curriculum Vitae | Benjamin Bergougnoux

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Academic positions and degrees

- Since 2022* | **Postdoc** at University of Warsaw, Poland, in collaboration with the group of [Michał Pilipczuk](#).
- 2019-2022* | **Postdoc** at University of Bergen, Norway, in collaboration with the *Algorithm Group* and supervised by [Jan Arne Telle](#).
- 2018-2019* | **Assistant Professor** at Université Paris Cité and IRIF, in collaboration with the team [Theory and algorithmics of graphs](#).
- 2015-2018* | **PhD** in Computer Science from the Université Clermont Auvergne (France).
Laboratory: [LIMOS](#).
Thesis: *Matrix Decompositions and Algorithmic Applications to (Hyper)Graphs*.
Supervisor: [Mamadou Moustapha Kanté](#).
Defended on 13 February 2019.
- 2013-2015* | **Master degree** in Computer Science from the Université de Montpellier (France).
Specialization: Algorithmic, Complexity, Optimization.
Master Thesis: *Parameterized Complexity and Kernelization for Constraint Satisfaction Problem*. Supervised by [Cristophe Paul](#) and [Philippe Janssen](#).
- 2010-2013* | **Bachelor degree** in Mathematics from the Université de Montpellier (France).
Specialization: *Algebra and Computer Science*.

Publications in conferences

[C1] Sparse graphs of twin-width 2 have bounded tree-width

WITH J. GAJARSKÝ, G. GUSPIEL, P. HLINENÝ, F. POKRÝVKA, M. SOKOŁOWSKI * [ISAAC 2023](#) * [10.1007/978-3-031-43587-4_28](https://doi.org/10.1007/978-3-031-43587-4_28) * [Open Access](#)

[C2] Kernelization for finding lineal topologies (depth-first spanning trees) with many or few leaves

WITH E. SAM, P. GOLOVACH, N. BLASER * [FCT 2023](#) * [10.1007/978-3-031-43587-4_28](https://doi.org/10.1007/978-3-031-43587-4_28) * [Open Access](#)

[C3] Space-efficient parameterized algorithms on graphs of low shrubdepth

WITH V. CHEKAN, M. KANTÉ, R. GANIAN, M. MNICH, M. PILIPCZUK, S. OUM, E.J. VAN LEEUWEN * [ESA 2023](#) * [10.4230/LIPIcs.ESA.2023.18](https://doi.org/10.4230/LIPIcs.ESA.2023.18) * [Open Access](#)

[C4] New width parameters for independent set: one-sided-mim-width and neighbor-depth

WITH T. KORHONEN, I. RAZGAN * [WG 2023](#) * [10.1007/978-3-031-43380-1_6](https://doi.org/10.1007/978-3-031-43380-1_6) * [Open Access](#)

[C5] Tight lower bounds for problems parameterized by rank-width

WITH T. KORHONEN, N. NEDERLOF * [STACS 2023](#) * [10.4230/LIPIcs.STACS.2023.11](https://doi.org/10.4230/LIPIcs.STACS.2023.11) * [Open Access](#)

[C6] A logic-based algorithmic meta-theorem for mim-width

WITH J. DREIER, L. JAFFKE * [SODA 2023](#) * [10.1137/1.9781611977554.ch125](https://doi.org/10.1137/1.9781611977554.ch125) * [Open Access](#)

[C7] Recognition of linear and star variants of leaf powers is in P

WITH S. HØGEMO, M. VACHELLE, J. A. TELLE * [WG 2022](#) * [10.1007/978-3-031-15914-5_6](https://doi.org/10.1007/978-3-031-15914-5_6) * [Open Access](#)

[C8] On Dasgupta's hierarchical clustering objective and its relation to other graph parameters

WITH S. HØGEMO, U. BRANDES, C. PAUL, J. A. TELLE * [FCT 2021](#) * [10.1007/978-3-030-86593-1_20](https://doi.org/10.1007/978-3-030-86593-1_20) * [Open Access](#)

[C9] Close relatives of feedback vertex set without single-exponential algorithms parameterized by treewidth

WITH É. BONNET, N. BRETTELL, O. KWON * [IPEC 2020](#) * [10.4230/LIPIcs.IPEC.2020.3](https://doi.org/10.4230/LIPIcs.IPEC.2020.3) * [Open Access](#)

[C10] Node multiway cut and subset feedback vertex set on graphs of bounded mim-width

WITH C. PAPADOPOULOS, J. A. TELLE * [WG 2020](#) * [10.1007/978-3-030-60440-0_31](#) * [Open Access](#)

[C11] More applications of the d -neighbor equivalence: acyclicity and connectivity constraints

WITH M. M. KANTÉ * [ESA 2019](#) * [10.4230/LIPIcs.ESA.2019.17](#) * [Open Access](#)

[C12] On minimum connecting transition sets in graphs

WITH T. BELLITTO * [WG 2018](#) * [10.1007/978-3-030-00256-5_4](#) * [Open Access](#)

[C13] Towards a polynomial kernel for directed feedback vertex set

WITH E. EIBEN, R. GANIAN, S. ORDYNIAK, M. S. RAMANUJAN * [MFCS 2017](#) * [10.4230/LIPIcs.MFCS.2017.36](#) * [Open Access](#)

[C14] An optimal XP algorithm for Hamiltonian cycle on graphs of bounded clique-width

WITH M. M. KANTÉ, O. KWON * [WADS 2017](#) * [10.1007/978-3-319-62127-2_11](#) * [Open Access](#)

Publications in journals

[J1] Node multiway cut and subset feedback vertex set on graphs of bounded mim-width

WITH C. PAPADOPOULOS, J. A. TELLE * [Algorithmica, 2022](#) * [10.1007/s00453-022-00936-w](#) * [Open Access](#)

[J2] Towards a polynomial kernel for directed feedback vertex set

WITH E. EIBEN, R. GANIAN, S. ORDYNIAK, M. S. RAMANUJAN * [Algorithmica, 2021](#) * [10.1007/s00453-020-00777-5](#) * [Open Access](#)

[J3] More applications of the d -neighbor equivalence: acyclicity and connectivity constraints

WITH M. M. KANTÉ * [SIAM J. Discret. Math., 2021](#) * [10.1137/20M1350571](#) * [Open Access](#)

[J4] An optimal XP algorithm for Hamiltonian cycle on graphs of bounded clique-width

WITH M. M. KANTÉ, O. KWON * [Algorithmica, 2020](#) * [10.1007/s00453-019-00663-9](#) * [Open Access](#)

[J5] Counting minimal transversals of β -acyclic hypergraphs

WITH F. CAPELLI, M. M. KANTÉ * [J. Comput. Syst. Sci., 2019](#) * [10.1016/j.jcss.2018.10.002](#) * [Open Access](#)

[J6] Fast exact algorithms for some connectivity problems parameterized by clique-width

WITH M. M. KANTÉ * [Theor. Comput. Sci., 2019](#) * [10.1016/j.tcs.2019.02.030](#) * [Open Access](#)

Publications in workshops

[W1] Disjunctive minimal separators enumeration

WITH M. M. KANTÉ, KUNIHIRO WASA * [WEPA 2019](#) * [Open Access](#)

Publications in preparation

[P1] Enumerating minimal solution sets for metric graph problems

WITH O. DEFRAIN, F. MC INERNEY * [Open Access](#)

[P2] Model checking on graphs of bounded \mathcal{F} -branchwidth

WITH T. HAMM, L. JAFFKE, P. LIMA

[P3] A logic-based algorithmic meta-theorem: checking properties on 2-connected components

WITH L. JAFFKE

[P4] A new notion of Representative Sets for Graph Coloring

Collective responsibilities

- May 2022* | **APGA 2022: Advances in Parameterized Graph Algorithms**, Calp (Espagne).
Member of the organization committee, in charge of the website.
- 2019-2022* | **University of Bergen**.
Member of four committees for evaluating PhD students intermediary lectures.
- Since 2019* | **The Parameterized Complexity Newsletter**.
Co-editor of the newsletter.
- 2017-2018* | **LIMOS, Clermont-Ferrand (France)**.
Member of the laboratory council.
- 2016-2018* | **ANR project: GraphEn (Grappe Enumeration)**.
Member of the ANR projet and webmaster.
- November 2016* | **WEPA: Workshop on Enumeration Problems and Applications**, Clermont-Ferrand (France).
Member of the organization committee and webmaster.

Teaching

I gave 158 hours of teaching during my ATER position and 192 hours during my PhD. In the following, L is for lecture, T for tutorial and P for practical work.

Assistant professor, Université Paris Cité, 158 hours.			
<i>2018-2019</i>	C language	3 RD YEAR	60h P
	Programming Project	2 ND YEAR	24h T
	Object-oriented programming advanced	3 RD YEAR	20h P
	System programming	4 TH YEAR	24h P
	Web programming	3 RD YEAR	30h P
During my PhD, Université Clermont Auvergne, 3 × 64 hours.			
<i>2017-2018</i>	Algorithmic Introduction	1 ST YEAR	30h L/T
	Graph Theory	3 RD YEAR	18h P
	Project Supervisor	4 TH YEAR	
<i>2016-2017</i>	Operating Systems	3 RD YEAR	16h T 12h L, 16h T, 16h P
	IT tools	1 ST YEAR	12h P
	Networks	3 RD YEAR	8h T
<i>2015-2016</i>	OCaml programming	1 ST YEAR	64h P

Presentations as an external guest

- Seminar of the team ACRO, LIS, Marseille (France), March 2023.

- STACS, conference, Hamburg (Germany), March 2023.
- Virtual seminar, *Discrete Math Colloquium*, IBS (South Korea), February 2023.
- Seminar of the team ALGCO, LIRMM, Montpellier (France), December 2022.
- Seminar of the team Optimisation Combinatoire, G-SCOP, Grenoble (France), November 2022.
- GWP, Satellite Workshop of ICALP, Paris (France), July 2022.
- WG, conference, Tübingen (Germany), June 2022.
- GRAA, french virtual seminar of graph theory and combinatorics, January 2022.
- IPEC, online conference, December 2020.
- WG, online conference, June 2020.
- ESA, Munich (Germany), September 2019.
- IBS Summer Research Program on Algorithms and Complexity in Discrete Structures (South Korea), July 2019.
- Seminar of the algorithm group, University of Bergen (Norway), March 2019.
- International symposium of Basic Sciences at INU (South Korea), October 2018.
- JGA, french workshop on graphs and algorithms, Grenoble (France), November 2018.
- Seminar of the team LINKS, INRIA Lille (France), March 2017.
- JGA, french workshop on graphs and algorithms, Bordeaux (France), November 2017.
- Université de Bordeaux (France), LABRI, September 2017.
- JGA, french workshop on graphs and algorithms, Paris (France), November 2016.
- Seminar of the Algorithms and Complexity Group, TU Wien, Vienna (Austria), September 2016.

Research visits

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| 2023 | Université Aix Marseille (France), LIS, Team ACRO, 7 days,
Collaborators : O. Defrain, F. Mc Inerney. |
| 2022 | ENS Lyon (France), LIP, Team MC2, 3 days,
Collaborators : É. Bonnet. |
| 2019 | University of Bergen (Norway), Algorithm group, 7 days,
Collaborators: J. A. Telle, C. Papadopoulos. |
| 2018 | University of Incheon (South Korea), 7 days,
Collaborators: O. Kwon, E. Eiben. |
| 2017 | Université de Bordeaux (France), LABRI, 7 days,
Collaborators: M. Bonamy, T. Bellitto.

INRIA Lille (France), Team LINKS, 7 days,
Collaborators: F. Capelli. |
| 2016 | TU Wien (Austria), Algorithms and Complexity Group, 7 days,
Collaborators: E. Eiben, R. Ganian, S. Ordyniak, M. S. Ramanujan. |