Serge Gaspers

Curriculum Vitae

School of Computer Science
and Engineering
UNSW Sydney
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Sydney NSW 2052, Australia
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http://www.cse.unsw.edu.au/~sergeg/

Academic positions and roles

UNSW Sydney	**School of Computer Science and Engineering, UNSW Sydney (The University of New South Wales)**, Sydney, Australia
	I head the **Algorithms group**, I am a member of the Algorithmic Decision Theory group, and the UNSW AI Institute
Jan 2022 –	Professor
Jan 2018 – Feb 2024	Associate Head of School (Research)
Jan 2018 – Dec 2021	Associate Professor
Jun 2015 – May 2019	ARC Future Fellow
Jul 2014 – Dec 2017	Senior Lecturer
Jun 2012 – May 2015	ARC DECRA Fellow
Data61	**Algorithmic Decision Theory group, Decision Sciences, Data61, CSIRO**, Sydney, Australia
Jul 2016 – Dec 2018	UNSW contributed staff
NICTA	**Algorithmic Decision Theory group, Optimisation Research Group, National ICT Australia (NICTA)**, Sydney, Australia
Jul 2014 – Jun 2016	Senior Researcher (UNSW contributed)
Jul 2012 – Jun 2014	Researcher (UNSW contributed)
TU Wien	**Institut für Informationssysteme, Technische Universität Wien**, Vienna, Austria
Oct 2010 – May 2012	Postdoctoral researcher
U Chile	**Centro de Modelamiento Matemático, Universidad de Chile**, Santiago, Chile
Sep 2009 – Sep 2010	Postdoctoral researcher
U Montpellier 2	**Laboratoire d'Informatique, de Robotique et de Microélectronique de Montpellier (LIRMM), Université Montpellier 2**, CNRS, Montpellier, France
Jan 2009 – Aug 2009	Postdoctoral researcher
Penn State	**Dep. of Computer Science and Engineering, The Pennsylvania State University**, University Park, Pennsylvania, USA
Nov 2007 – Dec 2007	Visiting Scholar, hosted by Martin Fürer
Dalhousie	**Dep. of Mathematics & Statistics, Dalhousie University**, Halifax, Nova Scotia, Canada
Sep 2007 – Nov 2007	Visiting Researcher, hosted by Richard J. Nowakowski
IBM Watson	**Dep. of Mathematical Sciences, IBM T.J. Watson Research Center**, Yorktown, New York, USA
Jul 2007 – Sep 2007	Visiting Researcher, hosted by Gregory B. Sorkin

Education

U Bergen — **Institutt for Informatikk, Universitetet i Bergen**, Bergen, Norway

2006 – 2008 PhD in Computer Science, "Exponential Time Algorithms: Structures, Measures, and Bounds" supervised by Fedor V. Fomin.

U Lorraine — **Université Paul Verlaine - Metz (now: Université de Lorraine)**, Metz, France

2004 – 2005 Diplôme d'Etudes Approfondies Informatique de Lorraine, Master thesis "Algorithmes exponentiels" supervised by Dieter Kratsch.

2003 – 2004 Maîtrise Informatique

2002 – 2003 Licence Informatique

U Luxembourg — **Centre Universitaire de Luxembourg (now: University of Luxembourg)**, Luxembourg, Luxembourg

2000 – 2002 Diplôme Universitaire de Technologie en Informatique

Research Interests

Algorithms, Complexity — combinatorial optimization, exponential time algorithms, parameterized complexity, quantum algorithms

Combinatorics — extremal combinatorics, graph classes, graph decompositions, graph searching, width parameters

Satisfiability, Constraints — backdoors, (local) consistency, global constraints, propagation

Applications — algorithmic game theory, computational social choice, resource allocation, networks, preprocessing, scheduling

Selected Awards and Grants

2021 Discovery Project from the Australian Research Council for the project DP210103849 "Improved algorithms via random sampling" (with Fedor Fomin and Daniel Lokshtanov), A$ 435,346 (2021–2023)

2017 UNSW Deputy Vice-Chancellor (Research) Future Fellowship support, A$ 70,000.

2016 Data61, CSIRO / UNSW Collaborative Research Project on the Computational Complexity of Resource Allocation Problems (with Toby Walsh and Haris Aziz), A$ 198,847 (2016 – 2018)

2016 UNSW Deputy Vice-Chancellor (Research) Future Fellowship support, A$ 70,000.

2015 UNSW School of Computer Science & Engineering Future Fellowship support, A$ 20,000.

2014 Discovery Project from the Australian Research Council for the project DP150101134 "Local reoptimization for turbocharging heuristics" (with Joachim Gudmundsson, Michael R Fellows, Julian Mestre, and Fedor Fomin), A$ 355,100 (2015–2017)

2014 Future Fellowship from the Australian Research Council for the project FT140100048 "Algorithms for hard graph problems based on auxiliary data", A$ 711,489 (2014–2018)

2013 IJCAI 2013 Most Educational Video Award

2012 NICTA / UNSW Collaborative Research Project on the Computational Complexity of Resource Allocation Problems (with Toby Walsh), A$ 379,038 (2012 – 2016)

2012 Discovery Early Career Researcher Award (DECRA) from the Australian Research Council for the project DE120101761 "Solving intractable problems: from practice to theory and back", A$ 375,000 (2012–2014)

2012 Vice-Chancellor's Postdoctoral Research Fellowship at UNSW Australia (declined to take up the DECRA instead)

Participation in Schools and Workshops (selection)

Dagstuhl — Dagstuhl Seminar 20301 on Matching Under Preferences: Theory and Practice. Schloss Dagstuhl, Germany, July 19–24, 2020 (canceled).

Dagstuhl Seminar 18421 on Algorithmic Enumeration: Output-sensitive, Input-Sensitive, Parameterized, Approximative. Schloss Dagstuhl, Germany, October 14–19, 2018.

Dagstuhl Seminar 16232 on Fair Division. Schloss Dagstuhl, Germany, June 5–10, 2016.

Dagstuhl Seminar 15301 on The Constraint Satisfaction Problem: Complexity and Approximability. Schloss Dagstuhl, Germany, July 19–24, 2015.

Dagstuhl Seminar 14451 on Optimality and tight results in parameterized complexity. Schloss Dagstuhl, Germany, November 2–7, 2014.

Dagstuhl Seminar 13331 on Exponential Algorithms: Algorithms and Complexity Beyond Polynomial Time. Schloss Dagstuhl, Germany, August 11–16, 2013.

Dagstuhl Seminar 12241 on Data Reduction and Problem Kernels. Schloss Dagstuhl, Germany, June 10–15, 2012.

Dagstuhl Seminar 10441 on the Exact Complexity of NP-hard problems. Schloss Dagstuhl, Germany, October 31 – November 5, 2010.

Dagstuhl Seminar 08431 on Moderately Exponential Time Algorithms. Schloss Dagstuhl, Germany, October 19–24, 2008.

Dagstuhl Seminar 07211 on Exact, Approximative, Robust and Certifying Algorithms on Particular Graph Classes. Schloss Dagstuhl, Germany, May 20–25, 2007.

Other

COOGEE 2024, the 2024 Sydney Quantum Information Theory Workshop (Sydney, Australia, 2024),

AMSI–AustMS Workshop on Bridging Maths and Computer Science (Sydney, Australia, 2022),

WEPA 2019, the 3rd International Workshop on Enumeration Problems & Applications, Awaji Island, Japan, October 28–31, 2019.

NII Shonan Meeting on Logic and Computational Complexity, Shonan Village Center, Japan, September 18–22, 2017.

Simons Workshop on Satisfiability Lower Bounds and Tight Results for Parameterized and Exponential-Time Algorithms, Berkeley, CA, USA, November 2–6, 2015.

WorKer 2015, Workshop on Kernelization, Nordfjordeid, Norway, June 1–4, 2015.

2015 ASL North American Annual Meeting (Association for Symbolic Logic), Urbana, IL, USA, March 25–28, 2015.

Graphs & Decisions 2014, Luxembourg, Luxembourg, October 27–29, 2014.

PCCR 2014, the 2nd Workshop on the Parameterized Complexity of Computational Reasoning, Vienna, Austria, July 17–18, 2014.

Frontiers and Connections between Parametrization and Approximation, Bertinoro, Italy, May 25–30, 2014.

First Symposium on Structure in Hard Combinatorial Problems, Vienna, Austria, May 16–18, 2013.

WorKer 2013, Workshop on Kernelization, Warsaw, Poland, April 10–12, 2013.

36 ACCMCC, the 36th Australasian Conference on Combinatorial Mathematics and Combinatorial Computing, Sydney, Australia, December 10-14, 2012.

WorKer 2011, the 3rd Workshop on Kernelization, Vienna, Austria, September 2-4, 2011.

Treewidth Workshop, Bergen, Norway, May 19–20, 2011.

61. Theorietag, Trier, Germany, February 24–25, 2011.

Invited Talks

Invited talks

I have given numerous invited talks at Dagstuhl seminars, universities, research centres, and at

AMSI–AustMS Workshop on Bridging Maths and Computer Science (Sydney, Australia, 2022),

WEPA 2019, the 3rd International Workshop on Enumeration Problems & Applications (Awaji Island, Japan, 2019),

AAAI 2018, the 32nd AAAI Conference on Artificial Intelligence, What's Hot session (New Orleans, LA, USA, 2018),

ADT 2017, the 5th International Conference on Algorithmic Decision Theory, Doctoral Consortium (Luxembourg, 2017),

CATS 2017, workshop on Computational & Algorithmic Topology, Sydney (Sydney, Australia, 2017),

Computability and Complexity Symposium 2017 (New Zealand, 2017),

the Simons Institute Workshop on Satisfiability Lower Bounds and Tight Results for Parameterized and Exponential-Time Algorithms (Berkeley, CA, USA, 2015),

WorKer 2015, the 2015 Workshop on Kernelization (Nordfjordeid, Norway, 2015),

ASL 2015, the 2015 North American Annual Meeting of the Association for Symbolic Logic (Urbana-Champaign, IL, USA, 2015),

Graphs & Decisions (Luxembourg, 2014), and

the First Symposium on Structure in Hard Combinatorial Problems (Vienna, Austria, 2013).

Teaching

COMP3121/9101 **Algorithm Design and Analysis**, *UNSW*.
I taught this course in 2025t1. In 2023t3, I taught 1/3 of the course and was lecturer-in-charge. Before that I gave guest lectures on computational intractability / NP-hardness in 2014s1 and 2016s1, and was online forum tutor in 2020t2.

COMP6741 **Algorithms for Intractable Problems**, *UNSW*.
I broadened/redesigned this course for 2022t2. Taught in 2022t2, 2023t1, and 2024t1.

COMP6741 **Parameterized and Exact Computation**, *UNSW*.
I designed this course and offered it annually, 2014s2–2020t3.

ENGG3600: 2021 **Engineering Vertically Integrated Project**, *UNSW*.
I was the academic lead for the project GraphAbility on the implementation of open-source graph algorithms in 2021.

ENGG3060: 2020 **Maker Games**, *UNSW*.
I was the academic mentor for 2 projects proposed by Accenture x Pollinate in 2020t2 and 2020t3.

COMP3821/9801 **Extended Algorithm Design and Analysis**, *UNSW*.
Guest lectures on computational intractability / NP-hardness in 2014s1 and 2016s1. Online forum tutor in 2020t2.

COMP4121: 2013s2 **Advanced and Parallel Algorithms**, *UNSW*.
Guest lectures on preprocessing / kernelization in 2013s2.

184.684: 2012S **Discrete Reasoning Methods**, *Vienna University of Technology*.
I co-taught this Master/PhD level course with Stefan Szeider.

184.708: 2011W **Seminar in Complexity Theory**, *Vienna University of Technology*.
I organized this Master/PhD level seminar series together with Stefan Szeider.

CC61X: 2010 **Design and Analysis of Adaptive Algorithms**, *University of Chile*.
As a guest lecturer in this course held by Jérémy Barbay, I introduced parameterized complexity to Master students (4 hours).

trial lecture: 2008 **Trial lecture**, *University of Bergen*.
As a requirement for the PhD program, I gave a 1-hour trial lecture on **Data Streaming**. The examiners were Dag Haugland, Daniel Meister, and Igor Semaev.

INF339 2007 and 2008 **Selected topics in Algorithms and Complexity**, *University of Bergen*.
I taught one lecture (2 hours) in this Master/PhD level course on Satisfiability algorithms in 2006 and one lecture (2 hours) on permutation graphs and circle graphs in 2007.

Supervision

Postdocs
Katie Clinch, Sep 2022 – Jun 2025
Stefan Rümmele, Nov 2015 – Nov 2017
Shenwei Huang, Sep 2016 – Aug 2017
Paul Hunter, Oct 2016 – Dec 2016

PhD students
Tiankuang (Ty) Zhang, main supervisor, 2021t3 –
Ayda Valinezhad Orang, main supervisor, 2019t1 –
Edward J. Lee, main supervisor, 2016s1 – 2021t2
Zhaohong Sun, joint supervisor, 2016s2 – 2020t2
Kamran Najeebullah, main supervisor, 2015s1 – 2018s1
Martin Aleksandrov, joint supervisor, 2014s1 – 2017s1
Simon Mackenzie, main supervisor, 2013s2 – 2016s2, recipient of the Malcolm Chaikin Prize for Research Excellence in Engineering (UNSW)

Master
Benjamin Edser, 2015s2

Honours
Tao Zixu He, 2024t3–2025t2
Damian Basso, 2023t2-2024t1
Jared Smith, 2023t1–2023t3

Gerald Huang, 2023t1–2023t3
Sean Morota Chu, 2022t2–2022t3
Tsz (Edward) Lu, 2020t1–2020t3
Andrew Kaploun, 2019t3–2020t3
Bhawna Kundu, 2019t3–2020t2
Joshua Lau, 2018, university medallist in computer science
Edward J. Lee, 2015
Alexis Shaw, 2015

Interns
Nidia Obscura Acosta, Nov 2016 – Feb 2017
Kevin Tran, Taste of Research Summer Scholarship, Nov 2016 – Feb 2017
Antonin Lambilliotte, Jun – Aug 2016
Edward J. Lee, Jan – Feb 2016
Jack (Jing Wu) Lian, Taste of Research Summer Scholarship, Nov 2013 – Feb 2014

Service and Community

PC member
I serve(d) on the Program Committees of
COCOON 2025, the 31st International Computing and Combinatorics Conference,
SOFSEM 2024 (**PC co-chair**), the 49th International Conference on Current Trends in Theory and Practice of Computer Science,
COMSOC 2023, the 9th International Workshop on Computational Social Choice,
AAMAS 2023, the 22nd International Conference on Autonomous Agents and Multi-Agent Systems,
AAAI 2023 (Senior PC member), the 37th AAAI Conference on Artificial Intelligence,
IJCAI 2021 (Senior PC member), the 30th International Joint Conference on Artificial Intelligence,
GAIW 2021, the 3rd Games, Agents and Incentives Workshop at AAMAS 2021,
WEPA 2020, the 4th International Workshop on Enumeration Problems and Applications,
KR 2020, the 18th International Conference on Principles of Knowledge Representation and Reasoning,
IJCAI 2020, the 29th International Joint Conference on Artificial Intelligence,
GAIW 2020, the 2nd Games, Agents and Incentives Workshop at AAMAS 2020,
AAMAS 2020, the 19th International Conference on Autonomous Agents and Multi-Agent Systems,
ICAART 2020, the 12th International Conference on Agents and Artificial Intelligence,
AAAI 2020 (Senior PC member), the 34th AAAI Conference on Artificial Intelligence,
MFCS 2019, the 44th International Symposium on Mathematical Foundations of Computer Science,
IJCAI 2019, the 28th International Joint Conference on Artificial Intelligence,
IWOCA 2019, the 30th International Workshop on Combinatorial Algorithms,
AAMAS 2019 (Senior PC member), the 18th International Conference on Autonomous Agents and Multiagent Systems,
GAIW 2019, the Games, Agents and Incentives confederated workshop,
FAMAS 2019, the AAMAS workshop on Fair Allocation in Multiagent Systems,
AAAI 2019, the 33rd AAAI Conference on Artificial Intelligence,
STACS 2019, the 36th International Symposium on Theoretical Aspects of Computer Science,
GCAI 2018, the 4th Global Conference on Artificial Intelligence,
KR 2018, the 16th International Conference on Principles of Knowledge Representation and Reasoning,
IPEC 2018, the 13th International Symposium on Parameterized and Exact Computation,
IWOCA 2018, the 29th International Workshop on Combinational Algorithms,
IJCAI 2018 (Senior PC member), the 27th International Joint Conference on Artificial Intelligence,
AI^3, the AAMAS-IJCAI workshop on Agents and Incentives in Artificial Intelligence,
SAT 2018, the 21st International Conference on Theory and Applications of Satisfiability Testing,

AAMAS 2018 (Senior PC member), the 17th International Conference on Autonomous Agents and Multiagent Systems,

SWAT 2018, the 16th Scandinavian Symposium and Workshops on Algorithm Theory,

AAAI 2018, the 32nd AAAI Conference on Artificial Intelligence,

SAT 2017 (**PC co-chair**), the 20th International Conference on Theory and Applications of Satisfiability Testing,

IJCAI 2017, the 26th International Joint Conference on Artificial Intelligence,

IWOCA 2017, the 28th International Workshop on Combinational Algorithms (dedicated to the memory of Mirka Miller),

AAMAS 2017, the 16th International Conference on Autonomous Agents and Multiagent Systems,

EXPLORE 2017, the 4th Workshop on Exploring Beyond the Worst Case in Computational Social Choice,

AAAI 2017, the 31st AAAI Conference on Artificial Intelligence,

ISAAC 2016, the 27th International Symposium on Algorithms and Computation,

EXPLORE 2016, the 3rd Workshop on Exploring Beyond the Worst Case in Computational Social Choice,

IJCAI 2016, the 25th International Joint Conference on Artificial Intelligence,

EXPLORE 2015, the 2nd Workshop on Exploring Beyond the Worst Case in Computational Social Choice,

IJCAI 2015, the 24th International Joint Conference on Artificial Intelligence,

AAMAS 2015, the 14th International Conference on Autonomous Agents and Multiagent Systems,

ECAI 2014, the 21st European Conference on Artificial Intelligence,

EXPLORE 2014, the 1st Workshop on Exploring Beyond the Worst Case in Computational Social Choice,

IPEC 2013, the 8th International Symposium on Parameterized and Exact Computation,

AAAI 2013, the 27th AAAI Conference on Artificial Intelligence,

IJCAI 2013, the 23rd International Joint Conference on Artificial Intelligence, and

IPEC 2010, the 5th International Symposium on Parameterized and Exact Computation.

Organization

I am/was an organizer of

42ACCMCC, the 42nd Australasian Conference on Combinatorial Mathematics and Combinatorial Computing (2019),

SAT 2017 (co-chair), the 20th International Conference on Theory and Applications of Satisfiability Testing,

SAW 2016, the 2016 Sydney Algorithms Workshop,

a special session on parameterized complexity at ASL 2015, the 2015 North American Annual Meeting of the Association for Symbolic Logic (Urbana, Illinois, USA),

PCCR 2014, the 2nd Workshop on the Parameterized Complexity of Computational Reasoning (Vienna, Austria), and

WorKer 2011, the 3rd Workshop on Kernelization (Vienna, Austria).

I volunteered in the organization and local arrangements of WG 2005 (Metz, France), WG 2006 (Bergen, Norway), and WG 2009 (Montpellier, France), the 31st, 32nd, and 35th Workshop on Graph-Theoretic Concepts in Computer Science.

Steering Committees

SOFSEM (2024 –)

SAT Association (2017 – 2021)

Conferences

I have reviewed submissions for AAAI, AAMAS, ADT, CIAC, CiE, COCOON, COMSOC, CSR, ECAI, ESA, Eurocomb, EXPLORE, FOCS, GCAI, ICALP, ICTCS, IJCAI, IPCO, IPEC, ISAAC, IWOCA, KR, LATIN, MFCS, SAT, SoCS, SODA, SOFSEM, STACS, SWAT, TAMC, WADS, and WG.

Journals	I have reviewed papers for ACM Transactions on Algorithms, Algorithmica, Annals of Mathematics and Artificial Intelligence, Artificial Intelligence, Artificial Intelligence Review, Discrete Applied Mathematics, Discrete Mathematics, Discrete Mathematics & Theoretical Computer Science, Discrete Optimization, Electronic Journal of Combinatorics, Graphs and Combinatorics, Information and Computation, Information Processing Letters, Integers, International Journal of Computer Mathematics, Journal of Artificial Intelligence Research, Journal of Combinatorial Mathematics and Combinatorial Computing, Journal of Combinatorial Optimization, Journal of Computer and System Sciences, Journal of Discrete Algorithms, Journal on Satisfiability, Boolean Modeling and Computation (JSAT), Mathematical Programming, SIAM Journal on Discrete Mathematics, Theoretical Computer Science, and Theory of Computing Systems.
Grants	I have reviewed research proposals for the Australian Research Council, the Chilean National Commission for Scientific and Technological Research – CONICYT, the Czech Science Foundation, the Embassy of France in Australia, the European Research Council, the French Agence Nationale de la Recherche, the Israel Science Foundation, the National Science Centre in Poland, the Netherlands Organisation for Scientific Research, and the Research Grants Council of Hong Kong.
ERA	I served as a Peer Reviewer for the 2018 Excellence in Research for Australia (ERA) round.
CORE	I served on the 2018 conference ranking committee for theoretical computer science of the Computing Research and Education Association of Australasia. I chaired the committee in 2021 and served on the ranking chairs committee in 2021.
PhD examination	I was an examiner for the PhD thesis of Vinod Reddy in 2018 (IIT Gandhinagar, India), for the PhD thesis of Samin Aref in 2018 (University of Auckland, New Zealand), and for the PhD thesis of Viet Anh Do in 2024 (University of Adelaide, Australia).
Master examination	I was an examiner for the Master thesis of Jeffrey Smith in 2019 (Macquarie University, Australia).
Web	Occasional contributions to Theoretical Computer Science - Stack Exchange Occasional contributions to the Parameterized Complexity Community Wiki Occasional contributions to Wikipedia
Newsletter	I regularly proofread the FPT Newsletter before publication.
Algorithms Group	I created the Algorithms Group at UNSW in November 2013.

Professional Memberships

EATCS	European Association for Theoretical Computer Science
ACM	Association for Computing Machinery
SIGACT	ACM Special Interest Group on Algorithms and Computation Theory
AFRAN	Australian-French Association for Research and Innovation

Languages

Luxembourgish	**Native**
German	**Fluent**
French	**Fluent**
English	**Fluent**
Norwegian	**Intermediate**
Spanish	**Intermediate**

Publications

The ordering of authors is alphabetic, except for [J38], [C66], and [C74].

Books

[B1] Serge Gaspers. *Exponential time algorithms: structures, measures, and bounds*. VDM Verlag Dr. Mueller e.K., ISBN 978-3-639-21825-1, 216 pages, 2010. (Revised and updated version of my PhD thesis.)

Edited Books

[E1] Serge Gaspers and Toby Walsh. *Theory and Applications of Satisfiability Testing - SAT 2017 - 20th International Conference, Melbourne, VIC, Australia, August 28 - September 1, 2017, Proceedings*. Lecture Notes in Computer Science 10491, Springer 2017, ISBN 978-3-319-66262-6.

Book Chapters

[BC5] Serge Gaspers. *Extremal vertex-sets*. In Lowell W. Beineke, Martin Charles Golumbic, and Robin J. Wilson (editors), *Topics in Algorithmic Graph Theory*, Cambridge University Press, pages 317–334, 2021.

[BC4] Serge Gaspers, Sebastian Ordyniak, and Stefan Szeider. *Backdoor Sets for CSP*. In Andrei A. Krokhin and Stanislav Zivny (editors), *The Constraint Satisfaction Problem: Complexity and Approximability*, Dagstuhl Follow-Ups 7, Schloss Dagstuhl - Leibniz-Zentrum fuer Informatik, pages 137–157, 2017.

[BC3] Serge Gaspers. *Backdoors to SAT*. In Ming-Yang Kao (editor), *Encyclopedia of Algorithms*, Springer, pages 167–170, 2016.

[BC2] Serge Gaspers and Stefan Szeider. *Backdoors to Satisfaction*. In Hans L. Bodlaender, Rodney G. Downey, Fedor V. Fomin, Dániel Marx (editors), *The Multivariate Algorithmic Revolution and Beyond: Essays Dedicated to Michael R. Fellows on the Occasion of His 60th Birthday*, Springer LNCS 7370, pages 287-317, 2012.

[BC1] Michael R. Fellows, Serge Gaspers, and Frances A. Rosamond. *Multivariate complexity theory*. Chapter 13 in Edward K. Blum and Alfred V. Aho (editors), *Computer Science: The Hardware, Software and Heart of It*, pages 269-293, Springer, 2011.

Journal Publications

[J39] Serge Gaspers and Edward J. Lee. *Faster Graph Coloring in Polynomial Space*. Algorithmica 85(2): 584–609, 2023.

[J38] Josh Smith, Hassan Jameel Asghar, Gianpaolo Gioiosa, Sirine Mrabet, Serge Gaspers, and Paul Tyler. *Making the Most of Parallel Composition in Differential Privacy*. Proceedings on Privacy Enhancing Technologies 2022(1): 253–273, 2022 (CORE conference rank: A).

[J37] Haris Aziz, Péter Biró, Tamás Fleiner, Serge Gaspers, Ronald de Haan, Nicholas Mattei, and Baharak Rastegari. *Stable Matching with Uncertain Pairwise Preferences*. Theoretical Computer Science 909: 1–11, 2022..

[J36] Katrin Casel, Henning Fernau, Serge Gaspers, Benjamin Gras, and Markus L. Schmid. *On the Complexity of the Smallest Grammar Problem over Fixed Alphabets*. Theory of Computing Systems 65(2): 344–409, 2021.

[J35] Haris Aziz, Péter Biró, Serge Gaspers, Ronald de Haan, Nicholas Mattei, and Baharak Rastegari. *Stable Matching with Uncertain Linear Preferences*. Algorithmica 82(5): 1410–1433, 2020.

[J34] Serge Gaspers and Shenwei Huang. *Linearly χ-Bounding (P_6, C_4)-Free Graphs*. Journal of Graph Theory 92(3): 322–342, 2019.

[J33] Serge Gaspers, Shenwei Huang, and Daniël Paulusma. *Colouring square-free graphs without long induced paths*. Journal of Computer and System Sciences 106: 60–79, 2019.

[J32] Serge Gaspers and Shenwei Huang. *$(2P_2, K_4)$-Free Graphs are 4-Colorable*. SIAM Journal on Discrete Mathematics 33(2): 1095–1120, 2019.

[J31] Fedor V. Fomin, Serge Gaspers, Daniel Lokshtanov, and Saket Saurabh. Exact Algorithms via Monotone Local Search. Journal of the ACM 66(2): 8:1–8:23, 2019.

[J30] Serge Gaspers, Joachim Gudmundsson, Mitchell Jones, Julián Mestre and Stefan Rümmele. Turbocharging Treewidth Heuristics. Algorithmica 81(2): 439–475, 2019.

[J29] Stephen Finbow, Serge Gaspers, Margaret-Ellen Messinger, and Paul Ottaway. A note on the eternal dominating set problem. International Journal of Game Theory 47(2): 543–555, 2018.

[J28] Haris Aziz, Serge Gaspers, Simon Mackenzie, Nicholas Mattei, Paul Stursberg, and Toby Walsh. Fixing balanced knockout and double elimination tournaments. Artificial Intelligence 262: 1-14, 2018.

[J27] Serge Gaspers and Simon Mackenzie. On the Number of Minimal Separators in Graphs. Journal of Graph Theory 87(4): 653–659, 2018.

[J26] Serge Gaspers and Gregory B. Sorkin. Separate, Measure and Conquer: Faster Algorithms for Max 2-CSP and Counting Dominating Sets. ACM Transactions on Algorithms 13(4): 44:1–44:36, 2017.

[J25] Serge Gaspers, Neeldhara Misra, Sebastian Ordyniak, Stefan Szeider, and Stanislav Zivny. Backdoors into heterogeneous classes of SAT and CSP. Journal of Computer and System Sciences 85: 38–56, 2017.

[J24] Serge Gaspers, Sebastian Ordyniak, M. S. Ramanujan, Saket Saurabh, and Stefan Szeider. Backdoors to q-Horn. Algorithmica 74(1): 540–557, 2016.

[J23] René van Bevern, Rodney G. Downey, Michael R. Fellows, Serge Gaspers, and Frances A. Rosamond. Myhill-Nerode Methods for Hypergraphs. Algorithmica 73(4): 696–729, 2015.

[J22] Serge Gaspers, Mikko Koivisto, Mathieu Liedloff, Sebastian Ordyniak, and Stefan Szeider. On Finding Optimal Polytrees. Theoretical Computer Science 592: 49-58, 2015.

[J21] Haris Aziz, Serge Gaspers, Simon Mackenzie, and Toby Walsh. Fair Assignment of Indivisible Objects Under Ordinal Preferences. Artificial Intelligence, 227: 71–92, 2015.

[J20] Fabrizio Frati, Serge Gaspers, Joachim Gudmundsson, and Luke Mathieson. *Augmenting Graphs to Minimize the Diameter*. Algorithmica, 72(4): 995–1010, 2015.

[J19] Serge Gaspers, Mathieu Liedloff, Maya J. Stein, and Karol Suchan. Complexity of Splits Reconstruction for Low-Degree Trees. Discrete Applied Mathematics, 180: 89–100, 2015.

[J18] Serge Gaspers and Stefan Szeider. *Guarantees and Limits of Preprocessing in Constraint Satisfaction and Reasoning*. Artificial Intelligence, 216: 1–19, 2014.

[J17] Martin Fürer, Serge Gaspers, and Shiva Prasad Kasiviswanathan. *An Exponential Time 2-Approximation Algorithm for Bandwidth*. Theoretical Computer Science, special issue on Exact & Parameterized Computation – Moderately Exponential & Parameterized Approximation, 511: 23–31, 2013.

[J16] Daniel Binkele-Raible, Henning Fernau, Serge Gaspers, and Mathieu Liedloff. *Exact and Parameterized Algorithms for Max Internal Spanning Tree*. Algorithmica 65(1): 95–128, 2013.

[J15] Fedor V. Fomin, Serge Gaspers, Saket Saurabh, and Stéphan Thomassé. *A linear vertex kernel for Maximum Internal Spanning Tree*. Journal of Computer and System Sciences 79(1): 1–6, 2013.

[J14] Serge Gaspers and Matthias Mnich. *Feedback Vertex Sets in Tournaments*. Journal of Graph Theory 72(1): 72–89, 2013.

[J13] Serge Gaspers and Mathieu Liedloff. *A Branch-and-Reduce Algorithm for Finding a Minimum Independent Dominating Set*. Discrete Mathematics & Theoretical Computer Science 14(1): 29–42, 2012.

[J12] Michael R. Fellows, Serge Gaspers, and Frances A. Rosamond. *Parameterizing by the Number of Numbers*. Theory of Computing Systems 50(4): 675–693, 2012.

[J11] Serge Gaspers, Dieter Kratsch, and Mathieu Liedloff. *On independent sets and bicliques in graphs*. Algorithmica 62(3): 637–658, 2012.

[J10] Serge Gaspers and Gregory B. Sorkin. *A universally fastest algorithm for Max 2-Sat, Max 2-CSP, and everything in between*. Journal of Computer and System Sciences 78(1): 305–335, 2012.

[J9] Stéphane Bessy, Fedor V. Fomin, Serge Gaspers, Christophe Paul, Anthony Perez, Saket Saurabh, and Stéphan Thomassé. *Kernels for Feedback Arc Set in tournaments*. Journal of Computer and System Sciences, 77(6): 1071–1078, 2011.

[J8] Daniel Binkele-Raible, Henning Fernau, Serge Gaspers, and Mathieu Liedloff. *Exact exponential-time algorithms for finding bicliques*. Information Processing Letters, 111(2): 64–67, 2010.

[J7] Fedor V. Fomin, Serge Gaspers, Petr Golovach, Dieter Kratsch, and Saket Saurabh. *Parameterized algorithm for Eternal Vertex Cover*. Information Processing Letters, 110(16): 702–706, 2010.

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