EDUCATION

2006-2009	PhD, University of Oxford, UK. EPSRC Studentship.
2006-2006	Visiting student at the University of Turku, Finland. Erasmus Scholarship.
2004-2005	MSc (cum laude), VU University, Netherlands. Student Fellowship.
1999-2006	Mgr (summa cum laude) & RNDr, Charles University, Czechia. Merit Scholarship.

CURRENT POSITIONS

since 2021	Full Professor of Computer Science, University of Oxford, UK.
since 2017	Fellow and Tutor, Jesus College, University of Oxford, UK.

PREVIOUS POSITIONS

2014–2021	Associate Professor of Computer Science, University of Oxford, UK.
2014–2017	Research Fellow and Tutor, Keble College, University of Oxford, UK.
2013–2017	Research Lecturer, Department of Computer Science, University of Oxford, UK.
2012–2013	Senior Research Fellow, DIMAP, University of Warwick, UK.
2009–2012	Junior Research Fellow, University College, University of Oxford, UK.

VISITING POSITIONS

2021	Visitor, Hausdorff Research Institute for Mathematics, Bonn, Germany.
2016	Visiting Scientist, Simons Institute for the Theory of Computing, UC Berkeley, USA.
2015	Visitor, Hausdorff Research Institute for Mathematics, Bonn, Germany.
2011	Visitor, Fields Institute for Research in Mathematical Sciences, Toronto, Canada.
2010	Research Intern, Microsoft Research, Cambridge, UK.

AWARDS AND PRIZES

2023	Title of Professor, awarded by the president of the Czech republic.
2023	Departmental Teaching Commendation for the course "Combinatorial Optimisation".
2011	Association for Constraint Programming (ACP) Doctoral Research Award.
2009	EPSRC Doctoral Prize / PhD+ Fellowship.

FELLOWSHIPS

2022–2027	ERC Consolidator Grant.[1]
2017–2022	ERC Starting Grant.
2013–2021	Royal Society University Research Fellowship.
2012–2013	Pacific Institute for the Mathematical Sciences (PIMS) Fellowship.
2009–2012	JRF in Mathematical and Physical Sciences, University College, University of Oxford.

ORGANISATION OF SCIENTIFIC MEETINGS

2023–2025	American Institute of Mathematics (AIM) SQuARE: Relaxations for Promise CSPs.
2020–2023	London Mathematical Society Computer Science Colloquium.
2022	Dagstuhl Seminar 22201: The CSP: Complexity and Approximability.
2021	Early Career Researchers Workshop, European Computer Science Summit.
2018	Dagstuhl Seminar 18321: The CSP: Complexity and Approximability.

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[1]Awarded as an ERC Consolidator Grant in March 2022 as the only ERC CoG awarded to the University of Oxford across all disciplines and the only ERC CoG awarded in Computer Science and Informatics (PE6 panel) in the UK in the 2021 round. Due to the non-association of the UK to the ERC, this grant was transformed into an equivalent UKRI ERC Guarantee Grant.

PUBLICATIONS

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2 books, 5 book chapters, over 40 journal papers, over 50 conference papers.

20 selected publications:

(1) *Approximate graph colouring and the hollow shadow* [doi | arXiv]
(with L. Ciardo), Proc. **STOC'23**, 2023.

(2) *Boolean symmetric vs. functional PCSP dichotomy* [doi | arXiv]
(with T.-V. Nakajima), Proc. **LICS'23**, 2023.

(3) *Approximate graph colouring and crystals* [doi | arXiv]
(with L. Ciardo), Proc. **SODA'23**, pp. 2256–2267, 2023.

(4) *Hierarchies of minion tests for PCSPs through tensors* [doi | arXiv]
(with L. Ciardo), Proc. **SODA'23**, pp. 568–580, 2023.

(5) *Pliability and approximating Max-CSPs* [doi | arXiv]
(with M. Romero and M. Wrochna), **JACM**, 2023.

(6) *Additive sparsification of CSPs* [doi | arXiv]
(with E. Pelleg), **ACM TALG**, 2023.

(7) *Topology and adjunction in promise constraint satisfaction* [doi | arXiv]
(with A. Krokhin, J. Opršal, and M. Wrochna), **SICOMP** 52(1), pp. 38–79, 2023.

(8) *CLAP: A new algorithm for promise CSPs* [doi | arXiv]
(with L. Ciardo), **SICOMP** 52(1), pp. 1–37, 2023.

(9) *PTAS for sparse general-valued CSPs* [doi | arXiv]
(with B. Mezei and M. Wrochna), **ACM TALG** 19(2), Article No. 14, 2023.

(10) *The complexity of general-valued CSPs seen from the other side* [doi | arXiv]
(with C. Carbonnel and M. Romero), **SICOMP** 51(1), pp. 19–69, 2022.

(11) *Point-width and Max-CSPs* [doi | arXiv]
(with C. Carbonnel and M. Romero), **ACM TALG** 16(4), Article No. 54, 2022.

(12) *The combined basic LP and affine IP relaxation for promise VCSPs on infinite domains* [doi | arXiv]
(with C. Viola), **ACM TALG** 17(3), Article No. 21, 2021.

(13) *The complexity of promise SAT on non-Boolean domains* [doi | arXiv]
(with A. Brandts and M. Wrochna), **ACM ToCT** 13(4), 26, 2021.

(14) *The power of the combined LP and affine relaxation for promise CSPs* [doi | arXiv]
(with J. Brakensiek, V. Guruswami, and M. Wrochna), **SICOMP** 49(6), pp. 1232–1248, 2020.

(15) *The limits of SDP relaxations for general-valued CSPs* [doi | arXiv]
(with J. Thapper), **ACM ToCT** 10(3), Article No. 12, 2018.

(16) *The power of Sherali-Adams relaxations for general-valued CSPs* [doi | arXiv]
(with J. Thapper), **SICOMP** 46(4), pp. 1241–1279, 2017.

(17) *The complexity of finite-valued CSPs* [doi | arXiv]
(with J. Thapper), **JACM** 63(4), Article No. 37, 2016.

(18) *The power of linear programming for general-valued CSPs* [doi | arXiv]
(with V. Kolmogorov and J. Thapper), **SICOMP** 44(1), pp. 1–36, 2015.

(19) *The complexity of conservative valued CSPs* [doi | arXiv]
(with V. Kolmogorov), **JACM** 60(2), Article No. 10, 2013.

(20) *An algebraic theory of complexity for discrete optimisation* [doi | arXiv]
(with D. Cohen, M. Cooper, P. Creed, and P. Jeavons), **SICOMP** 42(5), pp. 1915–1939, 2013.

COMMISSION OF TRUST

Editor-in-Chief: SIAM Journal on Discrete Mathematics (since 2022, associate editor 2017-2022).

Editorial boards: Constraints, 2019–2023; Philosophical Transactions of the Royal Society A, since 2018.

Committees/panels: London Mathematical Society Computer Science Committee, chair since 2023 (member 2019–2023); Czech Summer School on Discrete Mathematics, since 2021; EPSRC Peer Review College, since 2018; Royal Society International Exchanges Committee, 2015–2020. Informatics Europe, 2021-2022; EurAI PhD Dissertation Award, 2018; ACP Doctoral Research Award, 2018.

PhD committees: Kristina Asimi (Charles University, 2023); Tomáš Dlask (Czech Technical University in Prague, 2022); Edwin Lock (University of Oxford, 2021); Ninad Rajgopal (University of Oxford, 2020); Kuan Yang (University of Oxford, 2020); Ekaterina Arafailova (Institute Mines-Telecom Atlantique, 2018); Radomír Černoch (Czech Technical University in Prague, 2018); Samuli Leppänen (USI Lugano, 2018); Clément Carbonnel (University of Toulouse, 2016); Andreas Göbel (University of Oxford, 2016); Robert Powell (Durham University, 2015); Hannes Uppman (Linköping University, 2015).

Conference programme committees: *TCS*: STOC'24, WG'24, ITCS '22, MFCS '20, '18; STACS '20; ISAAC '19; ESA '19; ICALP '18. *AI*: AAAI '21, '20, '18, '17 ,'12, '11, '10; IJCAI '21 (SPC), '20, '19, '15, '13, '11; CP '21 (SPC), '17, '16, '14, '13, '12, '11, '10.

Reviewing: *Journals*: ACM TALG, ACM ToCT, Acta Informatica, AMAI, AIJ, CC, Chicago JTCS, Constraints, CPC, DAM, DMTCS, DO, EJC, I&C, IPL, JACM, JAIR, JoCO, JCSS, JSL, MP, MSCS, OMaS, SICOMP, SIDMA, TCS, TheoretiCS, ToC, ToCS. *Grants*: CRM, EPSRC, ERC StG, ERC CoG, ERC SyG, Royal Society Fellowships and Research Grants, Czech Science Foundation, Polish National Science Centre, Swiss National Science Foundation.

INSTITUTIONAL RESPONSIBILITIES

Roles: *Department*: Deputy Head of Department (Teaching), since 2023; Director of Teaching, 2021–2023; Member of Departmental REF panel, 2018–2021; Algorithms and Complexity Theory Seminar Organiser, 2016–2019. *College*: Coordinator for the Computer Science and Philosophy Joint School, since 2020; Coordinator for the Mathematics and Computer Science Joint School, since 2018; IT Fellow, since 2018.

Appointments: Associate Professorship/Professorship with a Tutorial Fellowship at St Hilda's (2023), St Anne's (2022), Jesus (2021), Hertford (2020), Jesus (2020), Jesus (2018); Merton College Stipendiary Lectureship, 2022; Departmental Glasstone Fellowship, 2022; Departmental Lectureship, 2021, 2019.

Committees: *Department*: IT, chair since 2023; Professional Masters Programme Supervisory, since 2023; MSc Supervisory, since 2021; Education, since 2021 (chair since 2023); Senior Management Team, since 2021; Undergraduate Supervisory, since 2020 (chair 2021–2023); Mathematics and Computer Science Supervisory, 2021–2023; Computer Science and Philosophy Supervisory, 2021–2023 (chair 2022–2023); Access and Admissions, 2021–2023; PhD Scholarship, 2019–2022; Inspired Research, 2019–2021.
College: Academic, since 2019; Equality and Diversity, since 2018; Accommodation, Catering, and Conferences, since 2018; Property and Environment, since 2018; Governing Body, since 2017.
Other: Divisional Education, since 2023, 2021; Divisional Education Audit, 2022–2023; Mathematical Institute Teaching, 2021–2023.

Examining: Final Honours School Examiner (Parts A and B), 2019–2021; Undergraduate Project Assessor, 2018–2019, since 2021; Mathematics and Foundations of Computer Science Assessor, since 2017.
Transfer/confirmation vivas: Levente Bodnar, MT 2023; Paulina Smolarova, MT 2023; Hanlin Ren, HT 2023; Andrés Herrera-Poyatos, TT 2022; Reka Kovacs, MT 2021; Levente Bodnar, MT 2021; James Stewart, TT 2021; Edwin Lock, MT 2020; Andrés Herrera-Poyatos, MT 2020; Haozhe Zhang, TT 2020; Alexandros Hollender, TT 2020; Ninad Rajgopal, MT 2019; James Stewart, MT 2019; Edwin Lock, MT 2018; Kuan Yang, MT 2018; Alexandros Hollender, MT 2018; Matthias Gerstgrasser, TT 2017; Kuan Yang, TT 2017; Andreas Göbel, TT 2015; Matthias Gerstgrasser, MT 2014.

MAIN GRANTS

2022–2027	ERC Consolidator Grant.[1] PI.	€2.0M
2017–2022	ERC Starting Grant. PI.	€1.4M
2018–2021	Royal Society University Research Fellowship. PI.	£380K
2013-2018	Royal Society University Research Fellowship. PI.	£500K

OTHER GRANTS

2017–2022	Royal Society Enhancement Award. PI.	£85K
2014–2017	Royal Society Research Grant. PI.	£75K
2014–2017	EPSRC Grant EP/L021226/1. Co-I.	£114K

TEACHING

Courses: Combinatorial Optimisation (MT 2023, MT 2022), Probability and Computing (with S. Kiefer, MT 2015, MT 2014, MT 2013), Algorithms for and Complexity of Valued CSPs (2016), Algorithms for CSPs (2013), Mathematics for Computer Scientists II (with M. Liakata, 2013).

Classes and tutorials: Functional Programming, Discrete Mathematics, Linear Algebra, Continuous Mathematics, Design and Analysis of Algorithms, Introduction to Programming, Imperative Programming, Object Oriented Programming, Digital Systems, Introduction to Formal Proof, Logic and Proof, Models of Computation, Algorithms and Data Structures, Advanced Data Structures and Algorithms, Probability and Computing, Computational Complexity, Automata and Formal Languages, Theory of Data and Knowledge Bases, Randomised Algorithms.

SUPERVISION AND MENTORING

Postdocs: Karolina Okrasa, from 2024; George Osipov, from 2024; Alberto Larrauri, since 2023; Silvia Butti, since 2023; Lorenzo Ciardo, since 2020; Caterina Viola, 2020-2022 (→ faculty at University of Catania, Italy); Jakub Opršal, 2021–2022 (→ faculty at University of Birmingham, UK); Shuai Shao, 2020–2021 (→ faculty at USTC, China); Michael Kompatscher, 2020–2021 (→ faculty at Charles University, Czechia); Bálazs Mezei, 2020–2021 (→ finance); Marcin Wrochna, 2018–2020 (→ faculty at University of Warsaw, Poland); Miguel Romero, 2017–2019 (→ faculty at PUC, Chile); Clément Carbonnel, 2017–2018 (→ CNRS, France).

PhDs: Tamio-Vesa Nakajima, since 2021; Tom Orton (with V. Kanade and R. Santhanam), PhD 2023 (→ finance); Alex Brandts, PhD 2022 (→ finance); Jacob Focke, PhD 2020 (with L. Goldberg) (→ CISPA, Germany); Peter Fulla, PhD 2018 (→ faculty at Chuo University, Japan); Andrius Vaicenavičius, 2014–2017 (with P. Jeavons and C. McDiarmid), transferred to pursue a PhD in applied AI.

BSc, MSc: Leon Balan-Tribus, since 2023; Ruxandra-Laura Nanu, since 2023; Hong Zhang, MSc 2023; Serban-Ion Cercelescu, BSc 2023; Yichen Huang, BSc 2023; Jannik Kudla, MSc 2022; Costin Onescu, MCompSci 2022; Jáchym Solecký, MMathCompSci 2021; Costin Onescu, BSc 2021; Eden Pelleg, MSc 2020; Yunus Ayidin, BSc 2020; David Klaumbauer, MSc 2019; Silvia Butti, MSc 2018; Gregor Matl, MSc 2018; Ragnar Groot Koerkamp, MSc 2017; Andrius Vaicenavičius, MMath 2014.

All supervised BSc and MSc dissertations were awarded a distinction and contained
publishable results, two received a prize, and many led to research publications.

College lecturers: Zev Shirazi, since 2023; Matthias Lanzinger, 2021–2023; Cristina Matache, 2020–2021; Swaraj Dash, 2019–2021; Matthew Katzman, 2019–2021; Reino Niskanen, 2019–2020.

Research interns: Piotr Mitosek, 2020; Joanna Ochremiak, 2015; Andrius Vaicenavičius, 2013.