

## EDUCATION

- 2006-2009 PhD, University of Oxford, UK. PhD granted on 6<sup>th</sup> March 2010.  
Supervisor: Prof. Peter Jeavons. Thesis won the 2011 ACP doctoral research award.
- 2004-2005 MSc (cum laude), VU University, Netherlands.
- 1999-2006 Mgr (summa cum laude) & RNDr, Charles University, Czechia.

## CURRENT POSITION

- since 2017 Fellow and Tutor of Jesus College, University of Oxford, UK.
- since 2014 Professor of Computer Science, University of Oxford, UK.  
(05/2014–02/2021: Associate Professor).

## PREVIOUS POSITIONS

- 2021, 2015 Visitor, Hausdorff Research Institute for Mathematics, Bonn, Germany.
- 2016 Visiting Scientist, Simons Institute for the Theory of Computing, UC Berkeley, USA.
- 2014–2017 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, University of Warwick, UK.
- 2010 Research Intern, Microsoft Research, Cambridge, UK.
- 2009–2012 Junior Research Fellow, University College, University of Oxford, UK.

## FELLOWSHIPS

- 2022–2027 ERC Consolidator Grant.<sup>1</sup>
- 2017–2022 ERC Starting Grant.
- 2013–2021 Royal Society University Research Fellowship.
- 2009–2012 Junior Research Fellowship, University College, University of Oxford.
- 2009–2010 EPSRC Doctoral Prize / PhD+ Fellowship.

## SUPERVISION AND MENTORING

- Postdocs *Current:* L. Ciardo.  
C. Viola, 2020–2022; J. Opršal, 2021–2022; S. Shao, 2020–2021; M. Kompatscher, 2020–2021; B. Mezei, 2020–2021; M. Wrochna, 2018–2020; M. Romero, 2017–2019; Clément Carbonnel, 2017–2018.
- PhD *Current:* T. Orton (with V. Kanade and R. Santhanam), T.-V. Nakajima.  
A. Brandts, PhD 2022; J. Focke, PhD 2020 (with L. Goldberg); P. Fulla, PhD 2018.
- College *Current:* G. Baydin, M. Lanzinger.  
C. Matache, 2020–2021; S. Dash, 2019–2021; M. Katzman, 2019–2021; R. Niskanen, 2019–2020.
- Interns P. Mitosek, 2020; J. Ochremiak, 2015; A. Vaicenavičius, 2013.
- (B/M)Sc *Current:* S.-I. Cercelescu, Y. Huang.  
J. Kudla, MSc 2022; C. Onescu, MCompSci 2022; J. Solecký, MMathCompSci 2021; C. Onescu, BSc 2021; E. Pelleg, MSc 2020; Y. Ayidin, BSc 2020; D. Klaumbauer, MSc 2019; S. Butti, MSc 2018; G. Matl, MSc 2018; R. G. Koerkamp, MSc 2017; A. Vaicenavičius, MMath 2014.
- All supervised (B/M)Sc dissertations were awarded a distinction and contained publishable results, two received a prize, and many led to research publications.*

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<sup>1</sup>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



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

Twelve selected publications:

- (1) *Approximate graph colouring and crystals* [\[arXiv\]](#)  
(with L. Ciardo), Proc. **SODA'23**, to appear.
- (2) *Hierarchies of minion tests for PCSPs through tensors* [\[arXiv\]](#)  
(with L. Ciardo), Proc. **SODA'23**, to appear.
- (3) *CLAP: A new algorithm for promise CSPs* [\[arXiv\]](#)  
(with L. Ciardo), **SICOMP**, to appear.
- (4) *Topology and adjunction in promise constraint satisfaction* [\[arXiv\]](#)  
(with A. Krokhin, J. Opršal, and M. Wrochna), **SICOMP**, to appear.
- (5) *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.
- (6) *Treewidth-pleiability and PTAS for Max-CSPs* [\[doi | arXiv\]](#)  
(with M. Romero and M. Wrochna), Proc. **SODA'21**, pp. 473–483, 2021.
- (7) *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.
- (8) *The power of Sherali-Adams relaxations for general-valued CSPs* [\[doi | arXiv\]](#)  
(with J. Thapper), **SICOMP** 46(4), pp. 1241–1279, 2017.
- (9) *The complexity of finite-valued CSPs* [\[doi | arXiv\]](#)  
(with J. Thapper), **JACM** 63(4), Article No. 37, 2016.
- (10) *The power of linear programming for general-valued CSPs* [\[doi | arXiv\]](#)  
(with V. Kolmogorov and J. Thapper), **SICOMP** 44(1), pp. 1–36, 2015.
- (11) *The complexity of conservative valued CSPs* [\[doi | arXiv\]](#)  
(with V. Kolmogorov), **JACM** 60(2), Article No. 10, 2013.
- (12) *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.

## TEACHING AND INSTITUTIONAL RESPONSIBILITIES

**Courses:** Combinatorial Optimisation, Probability and Computing (with S. Kiefer), Algorithms for CSPs, Algorithms for and complexity of Valued CSPs, Mathematics for Computer Scientists II (with M. Liakata).

**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.

**Responsibilities:** Divisional Education Audit Committee, since 2022; Director of Teaching, since 2021; Senior Management Team, since 2021; Divisional Education Committee, 2021; Undergraduate Supervisory Committee, since 2020; Departmental REF panel, 2018–2021; Final Honours School Examiner (Parts A and B), 2019–2021; PhD Scholarship Committee, 2019–202; College Academic Committee, since 2019; College E&D Committee, since 2020; College E&D Working Group, 2018–2020; College IT Fellow, since 2018; Undergraduate Project Assessor, 2018–2019, since 2021; Mathematics and Foundations of Computer Science Assessor, since 2017; Algorithms and Complexity Theory Seminar Organiser, 2016–2019.

## COMMISSION OF TRUST

**Editorial boards:** Constraints, since 2019; Philosophical Transactions of the Royal Society A, since 2018; SIAM Journal on Discrete Mathematics, since 2017.

**Panels:** Informatics Europe, 2021-2022; London Mathematical Society Computer Science Committee, since 2019; EurAI PhD Dissertation Award, 2018; EPSRC Peer Review College, since 2018; ACP Doctoral Research Award, 2018; Royal Society International Exchanges Committee, 2015–2020.

**Appointment panels:** Associate Professorship/Professorship at the University of Oxford, 2023, 2022, 2021, 2020 (2x), 2018; Departmental Lectureship, 2021, 2019; Glasstone Fellowship, 2022.

**PhD committees:** 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:* ITCS '22, MFCS '20, '18; STACS '20; ISAAC '19; ESA '19; ICALP '18. *AI:* AAI '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 J. TCS, Constraints, CPC, DAM, DMTCS, DO, IC, IPL, JACM, JAIR, JoCO, JCSS, JSL, MP, MSCS, OMAS, SICOMP, SIDMA, TCS, ToC, ToCS. *Grants:* CRM, EPSRC, ERC StG, ERC CoG, ERC SyG, Royal Society Fellowships, Czech Science Foundation, Polish National Science Centre, Swiss National Science Foundation.

## ORGANIZATION OF SCIENTIFIC MEETINGS

2022 Dagstuhl Seminar [22201](#): The CSP: Complexity and Approximability.  
2021 Early Career Researchers Workshop, European Computer Science Summit.  
2021 London Mathematical Society Computer Science Colloquium.  
2020 London Mathematical Society Computer Science Colloquium.  
2018 Dagstuhl Seminar [18321](#): The CSP: Complexity and Approximability.

## MAIN GRANTS

2022–2027	ERC Consolidator Grant. <sup>1</sup> PI.	€2.0M
2017–2022	ERC Starting Grant. PI.	€1.4M
2018–2021	Royal Society University Research Fellowship. PI.	£380K
2017-2022	Royal Society Enhancement Award. PI.	£85K
2014–2017	Royal Society Research Grant. PI.	£75K
2013-2018	Royal Society University Research Fellowship. PI.	£500K
2012–2013	Pacific Institute for the Mathematical Sciences (PIMS) Fellowship. PI.	\$40K