

CURRICULUM VITAE OF STANISLAV ŽIVNÝ

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CURRENT POSITION

- UNIVERSITY COLLEGE, OXFORD UNIVERSITY, Oxford, UK.
Stipendiary Junior Research Fellow in Mathematical, Physical & Life Sciences, 10/2009–09/2012.
- BALLIOL COLLEGE, OXFORD UNIVERSITY, Oxford, UK.
Stipendiary Lecturer in Computing, since 10/2010.

PREVIOUS POSITIONS

- MICROSOFT RESEARCH, Cambridge, UK.
Researcher in the Constraint Reasoning Group, 06/2010–09/2010.

EDUCATION

- OXFORD UNIVERSITY COMPUTING LABORATORY, Oxford, UK.
D.Phil. (Ph.D. equivalent) in Computer Science, 10/2006–06/2009.
Thesis title: *The complexity and expressive power of valued constraints*.
Supervisor: Peter Jeavons.
Nominated for the British Computer Society best dissertation award 2010.
- VU UNIVERSITY, Amsterdam, Netherlands.
M.Sc. in Computer Science, cum laude, 08/2004–08/2005.
Thesis title: *Properties of oracle classes that collapse or separate complexity classes*.
Supervisors: Václav Koubek and Femke van Raamsdonk.
- CHARLES UNIVERSITY, Prague, Czech republic.
Mgr. (B.c. + M.Sc. equivalent) in Computer Science, summa cum laude, 09/1999–05/2005.
RNDr. (Rerum Naturalium Doctor, M.Phil. equivalent) in Computer Science, 09/2005–09/2006.
On leave to the Department of Mathematics, Turku University, Finland, 01/2006–06/2006.
Thesis title: *Relation between accepting languages and complexity of questions on oracle*.
Supervisor: Václav Koubek.

RESEARCH VISITS

- Microsoft Research, Cambridge, UK, 04/2010 (visiting Robert Mateescu).
- IRIT, University of Toulouse, Toulouse, France, 03/2010 (visiting Martin Cooper).

AWARDS & FELLOWSHIPS

- Stipendiary Junior Research Fellowship, University College, Oxford University, UK, 2009–2012.
- EPSRC PhD Plus Fellowship, Oxford University, UK, 2009–2010.
- Research Studentship, EPSRC Grant *The Complexity of Valued Constraints*, UK, 2007–2010.
- Academic Travel Award, Keble College, Oxford University, UK, 2007–2009.
- Computing Laboratory Stipend, Oxford University, UK, 2006–2009 (declined from 2007).
- EPSRC DTA Studentship, Oxford University, UK, 2006–2009 (declined from 2007).
- Charles Simonyi Fellow, Grand Challenges of Informatics, Hungary, 2006.
- Erasmus Scholarship, Turku University, Finland, 2006.
- Doctoral Grant *Collegium Informaticum*, Charles University, Czech republic, 2005–2006.
- Student Fellowship, VU University, Netherlands, 2004–2005.
- Student Fellowship, Charles University, Czech republic, 2001–2003, 2005–2006.

PUBLICATIONS

Refereed Journals

- [J5] [The expressive power of binary submodular functions](#)
(with D. Cohen and P. Jeavons), *Discrete Applied Mathematics* **157**(15), pages 3347–3358, 2009.
- [J4] [Classes of submodular constraints expressible by graph cuts](#)
(with P. Jeavons), *Constraints*, **15**(3), pages 430–452, 2010.
- [J3] [Structural properties of oracle classes](#)
(single author), *Information Processing Letters* **109**(19), pages 1131–1135, 2009.
- [J2] [A note on some collapse results of valued constraints](#)
(with B. Zanuttini), *Information Processing Letters* **109**(11), pages 534–538, 2009.
- [J1] [The expressive power of valued constraints: Hierarchies and collapses](#)
(with D. Cohen and P. Jeavons), *Theoretical Computer Science* **409**(1), pages 137–153, 2008.

Refereed Conference Proceedings

- [C6] [A new hybrid tractable class of soft constraint problems](#)
(with M. Cooper), *Proceedings of the 16th International Conference on Principles and Practice of Constraint Programming (CP)*, LNCS 6308, pages 152–166, 2010.
- [C5] [The complexity of valued constraint models](#)
(with P. Jeavons), *Proceedings of the 15th International Conference on Principles and Practice of Constraint Programming (CP)*, LNCS 5732, pages 833–841, 2009.
- [C4] [Same-relation constraints](#)
(with C. Jefferson, S. Kadioglu, K. Petrie, and M. Sellmann), *Proceedings of the 15th International Conference on Principles and Practice of Constraint Programming (CP)*, LNCS 5732, pages 470–485, 2009.
- [C3] [The expressive power of binary submodular functions](#)
(with D. Cohen and P. Jeavons), *Proceedings of the 34th International Symposium on Mathematical Foundations of Computer Science (MFCS)*, LNCS 5734, pages 744–757, 2009.

- [C2] [Classes of submodular constraints expressible by graph cuts](#)
(with P. Jeavons), *Proceedings of the 14th International Conference on Principles and Practice of Constraint Programming (CP)*, LNCS 5202, pages 112–127, 2008.
- [C1] [The expressive power of valued constraints: Hierarchies and collapses](#)
(with D. Cohen and P. Jeavons), *Proceedings of the 13th International Conference on Principles and Practice of Constraint Programming (CP)*, LNCS 4741, pages 798–805, 2007.

Theses

- [T3] The complexity and expressive power of valued constraints
Doctoral thesis, Oxford University Computing Laboratory, 2009.
- [T2] Properties of oracle classes that collapse or separate complexity classes
Master’s thesis, VU University in Amsterdam, 2005.
- [T1] Relation between accepting languages and complexity of questions on oracle
Master’s thesis, Charles University in Prague, 2005.

Miscellaneous

- [M5] The expressive power of binary submodular functions
(with D. Cohen and P. Jeavons), Research Report arXiv:0811.1885, 2008.
- [M4] Proceedings of the Oxford University Computing Laboratory Student Conference 2008
(with S. Faily et al.), Research Report CS-RR-08-10, Oxford University, 2008.
- [M3] Which submodular functions are expressible using binary submodular functions?
(with P. Jeavons), Research Report CS-RR-08-08, Oxford University, 2008.
- [M2] Expressibility of valued constraints
Proceedings of the Doctoral Programme of the 13th CP, pages 193–198, 2007.
- [M1] The expressive power of valued constraints: Hierarchies and collapses
(with D. Cohen and P. Jeavons), Research Report CS-RR-07-03, Oxford University, 2007.

TALKS

Invited talks

- *Submodularity and valued constraint satisfaction problems*
Microsoft Research, Cambridge, UK, 04/2010.
- *Decomposition of submodular polynomials*
STTT’09, ITI, Charles University, Prague, Czech republic, 06/2009.
- *Sudoku and other problems: Complexity of Constraint Satisfaction Problems*
Keble College, Oxford University, 05/2009.

Conferences and workshops

- *A new hybrid tractable class of soft constraint problems*
The 16th International Conference on Principles and Practice of Constraint Programming (CP),
St Andrews, UK, 09/2009.

- *The complexity of valued constraint models*
The 15th International Conference on Principles and Practice of Constraint Programming (CP),
Lisbon, Portugal, 09/2009.
- *The expressive power of binary submodular functions*
The 34th International Symposium on Mathematical Foundations of Computer Science (MFCS), Nový
Smokovec, Slovakia, 08/2009.
- *The expressive power of binary submodular functions*
The 3rd Annual Bristol Algorithms Days (BAD), Bristol, UK, 05/2009.
- *The expressive power of binary submodular functions*
The 25th British Colloquium for Theoretical Computer Science (BCTCS), Warwick, UK, 04/2009.
- *The expressive power of binary submodular functions*
DIMAP Workshop on Algorithmic Graph Theory, Warwick, UK, 03/2009.
- *The expressive power of binary submodular functions*
DIMACS - RUTCOR Workshop on Boolean and Pseudo-Boolean Functions,
Rutgers University, NJ, USA, 01/2009.
- *Submodular valued constraints*
INFORMS Annual Meeting, Washington D.C., USA, 10/2008.
- *Classes of submodular constraints expressible by graph cuts*
The 14th International Conference on Principles and Practice of Constraint Programming (CP),
Sydney, AU, 09/2008.
- *Valued constraints: modelling, expressive power and algebraic properties*
The 24th British Colloquium for Theoretical Computer Science (BCTCS), Durham, UK, 04/2008.
- *Expressibility of valued constraints*
Doctoral Programme of the 13th International Conference on Principles and Practice of Constraint
Programming (CP), Providence, RI, USA, 09/2007.

Seminars

- *Submodularity and valued constraint satisfaction problems*
IRIT, University of Toulouse, Toulouse, France, 03/2010.
- *The expressive power of binary submodular functions*
Cakes Seminar, Oxford University Computing Laboratory, Oxford, UK, 10/2008.
- *Submodular valued constraints*
Computer Vision Group, University of Leeds, UK, 10/2008.
- *Classes of submodular constraints expressible by graph cuts*
EEC, The University of Melbourne, Melbourne, AU, 09/2008.
- *(Mostly submodular) valued constraints*
CMP, Czech Technical University, Prague, Czech republic, 08/2008.
- *(Submodular) valued constraints*
Computer Vision Group, Oxford Brookes University, Oxford, UK, 04/2008.
- *The expressive power of valued constraints: hierarchies and collapses*
Noon Seminar, Charles University, Prague, Czech republic, 12/2007.

- *The expressive power of valued constraints: hierarchies and collapses*
CIRCA Seminar, University of St Andrews, Scotland, UK, 12/2007.
- *The expressive power of valued constraints: hierarchies and collapses*
Cakes Seminar, Oxford University Computing Laboratory, Oxford, UK, 11/2007.

TEACHING

- Stipendiary Lecturer in Computing, Balliol College, Oxford University, 2010–.
- Non-Stipendiary Lecturer in Computing, Hertford College, Oxford University, 2008–2009.

Tutorials

- Tutor in *Advanced Data Structures and Algorithms*, Oxford University, Hilary Term 2010.
- Tutor in *Design and Analysis of Algorithms*, University College, Oxford University, Hilary Term 2010.
- Tutor in *Models of Computation*, Hertford and Lincoln College, Oxford University, Trinity Term 2009.
- Tutor in *Logic and Proof*, Hertford College, Oxford University, Hilary Term 2009.
- Tutor in *Design and Analysis of Algorithms*, Lincoln College, Oxford University, Hilary Term 2009.
- Tutor in *Object Oriented Programming*, Hertford College, Oxford University, Michaelmas Term 2008.
- Tutor in *Concurrency*, Hertford College, Oxford University, Michaelmas Term 2008.
- Tutoring secondary school mathematics, Czech republic and England, 2005–2008.

Classes

- Teaching Assistant in *Computational Complexity*, Oxford University, Hilary Term 2010.
- Teaching Assistant in *Advanced Data Structures and Algorithms*, Oxford University, Hilary Term 2009.
- Teaching Assistant in *Theory of Data and Knowledge Bases*, Oxford University, Hilary Term 2009.
- Teaching Assistant in *Computational Complexity*, Oxford University, Michaelmas Term 2008.
- Teaching Assistant in *Randomised Algorithms*, Oxford University, Michaelmas Term 2008.
- Teaching Assistant in *Complexity*, Oxford University, Michaelmas Term 2007.
- Teaching Assistant in *Data Structures and Algorithms*, Oxford University, Hilary Term 2007.
- Teaching Assistant in *Functional Programming*, Oxford University, Michaelmas Term 2006.
- Teaching Assistant in *Introduction to Programming*, Charles University, Autumn 2005.

CONFERENCES, WORKSHOPS & SUMMER SCHOOLS ATTENDED

- International Meeting on Markov Fields, Soft CSPs and Energy Minimisation, Kiev, Ukraine, 10/2010.
- The 16th International Conference on Principles and Practice of Constraint Programming (CP), St Andrews, UK, 09/2010.
- International Workshop on Tractability, Microsoft Research, Cambridge, UK, 07/2010.
- The Constraint Satisfaction Problem: Complexity and Approximability, Dagstuhl, Germany, 10/2009.
- The 15th International Conference on Principles and Practice of Constraint Programming (CP), Lisbon, Portugal, 09/2009.
- The 34th International Symposium on Mathematical Foundations of Computer Science (MFCS), Novy Smokovec, Slovak Republic, 08/2009.
- The 22nd International Workshop on Description Logics (DL), Oxford, UK, 07/2009.
- LMS-EP SRC Course on Probabilistic Combinatorics, Cambridge, UK, 07/2009.
- Contemporary Trends in Computer Science (Současné trendy teoretické informatiky - STTI'09), Institute for Theoretical Computer Science, Charles University, Prague, Czech republic, 06/2009.
- Spring School on Fixed Parameter and Exact Algorithms, Lozari, Corsica (France), 05/2009.
- The 3rd Annual Bristol Algorithms Days (BAD), Bristol, UK, 05/2009.
- The 25th British Colloquium for Theoretical Computer Science (BCTCS), Warwick, UK, 04/2009.
- DIMAP Workshop on Algorithmic Graph Theory, Warwick, UK, 03/2009.
- One-Day Meeting in Combinatorics 2009, Oxford, UK, 03/2009.
- Workshop on Data Exchange, Oxford, UK, 02/2009.
- DIMACS - RUTCOR Workshop on Boolean and Pseudo-Boolean Functions, Rutgers University, NJ, USA, 01/2009.
- The 3rd Winter School in eScience on Optimization, Geilo, Norway, 01/2009.
- DIMAP Algorithms Day, University of Warwick, UK, 10/2008.
- INFORMS Annual Meeting, Washington D.C., USA, 10/2008.
- The 14th International Conference on Principles and Practice of Constraint Programming (CP), Sydney, Australia, 09/2008.
- The 46th Summer School on Algebra and Ordered Sets, Třešť, Czech republic, 09/2008.
- Logic and Algorithms, Appleton Tower, University of Edinburgh, UK, 07/2008.
- Probabilistic Techniques in Computer Science, Bristol, UK, 07/2008.
- Modelling with Constraints: Theory and Practice, ACP Summer School, St Andrews, UK, 07/2008.
- NATCOR Convex Optimization, London, UK, 06/2008.
- The 24th British Colloquium for Theoretical Computer Science (BCTCS), Durham, UK, 04/2008.
- NATCOR Heuristics and Approximation Algorithms, Nottingham, UK, 03/2008.

- One-Day Meeting in Combinatorics 2008, Oxford, UK, 03/2008.
- Graph Cuts and Related Discrete or Continuous Optimization Problems, IPAM, UCLA, CA, USA, 02/2008.
- Adonet-CIRM school on Graphs and Algorithms, Levico Terme, Italy, 10/2007.
- The 13th International Conference on Principles and Practice of Constraint Programming (CP), Providence, RI, USA, 09/2007.
- UK GRADschool, Oxford, UK, 09/2007.
- The 23rd British Colloquium for Theoretical Computer Science, Oxford, UK, 04/2007.
- One-Day Meeting in Combinatorics 2007, Oxford, UK, 03/2007.
- International Symmetry Conference, Edinburgh, UK, 01/2007.
- Grand Challenges of Informatics, Budapest, Hungary, 09/2006.

PROFESSIONAL ACTIVITIES

- Programme Committee Member, AAAI'10.
- Programme Committee Member, CP'10.
- Programme Co-Chair, Doctoral Programme of CP'10.
- Programme Chair, Workshop on Mathematical Foundations of Constraint Programming, 2010.
- Programme Committee Member, Doctoral Programme of CP'09.
- Programme Co-Chair, Oxford University Computing Laboratory Student Conference, 2008.
- Referee for AAAI, CP, CSL, ECAI, ICALP, ECCV.
- Referee for *Annals of Mathematics and Artificial Intelligence* and *Discrete Applied Mathematics*.
- Admissions Interviewer, University College, Oxford University, 2009.
- Admissions Interviewer, Hertford College, Oxford University, 2008.
- Admissions Interviews, St Anne's College, Oxford University, 2006, 2008.