Jan Hubička

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Born April 1, 1978 in Tábor, Czech Republic

Education

PhD Degree in Computer Science   *2002–2010*
Faculty of Mathematics and Physics, Charles University in Prague
Thesis: *Combinatorial Properties of Finite Models*, advisor Jaroslav Nešetřil

Master Degree in Computer Science   *1997–2002*
Faculty of Mathematics and Physics, Charles University in Prague
Thesis: *Ramsey Properties of Universal Sets*, advisor Jaroslav Nešetřil

Employment history

Departement of Applied Mathematics, Charles University, Prague   *since 2021*
Associate Professor

Computer Science Institute (IUUK), Charles University, Prague   *since 2016*
Researcher

Departement of Applied Mathematics, Charles University, Prague   *2017–2021*
Assistant Professor (habilitation thesis defended October 8 2020)

University of Calgary, Calgary   *2014–2015*
PIMS Postdoctoral Fellow

SUSE ČR s.r.o., Prague   *2000–2013 and since 2016*
Senior software developer

Institute of Theoretical Computer Science (ITI), Charles University, Prague   *2003–2013 and 2016–2018*
Researcher

Publications

Papers published in refereed international journals with impact factor

1. M Balko, D Chodounský, J Hubička, M Konečný, L Vena: Big Ramsey degrees of 3-uniform hypergraphs are finite, Combinatorica 42 (2022), 659–672.

2. J. Hubička, M. Konečný, J. Nešetřil: All those EPPA classes (Strengthenings of the Herwig-Lascar theorem), Transactions of the American Mathematical Society, 375 (2022), 7601–7667.

3. D. M. Evans, J. Hubička, M. Konečný, Y. Li, M. Ziegler: Simplicity of the automorphism groups of generalised metric spaces, Journal of Algebra 584 (2021), 163–179.

4. D. Evans, J. Hubička, J. Nešetřil: Ramsey properties and extending partial automorphisms for classes of finite structures, Fundamenta Mathematicae 253 (2021), 121–154.

5. J. Hubička, M. Konečný, J. Nešetřil: Conant's generalised metric spaces are Ramsey, Contributions to Discrete Mathematics 16 (2) (2021), 46–70.

6. A. Aranda, J. Hubička, E. K. Hng, M. Karamanlis, M. Kompatscher, M. Konečný, M. Pawliuk, D. Bradley-Williams: Completing graphs to metric spaces, Contributions to Discrete Mathematics 16 (2) (2021), 71–89.

7. D. Evans, J. Hubička, M. Konečný, J. Nešetřil: EPPA for two-graphs and antipodal metric spaces, Proceedings of the American Mathematical Society 148 (2020), 1901–1915.

8. J. Hubička, J. Nešetřil: All those Ramsey classes: Ramsey classes with closures and forbidden homomorphisms, Advances in Mathematics 356C (2019), 106791.

9. D. Evans, J. Hubička, J. Nešetřil: Automorphism groups and Ramsey properties of sparse graphs, Proceedings of the London Mathematical Society 119(2) (2019), 515–546.

10. J. Hubička, J. Nešetřil: Bowtie-free graphs have a Ramsey lift, Advances in Applied Mathematics 96 (2018), 286–311.

11. J. Fiala, J. Hubička, J. Nešetřil, Y. Long: Fractal property of the graph homomorphism order, European Journal of Combinatorics 66 (2017), 101–109.

12. J. Hubička, J. Nešetřil: Homomorphism and embedding universal structures for restricted classes, Journal of Multiple-Valued Logic and Soft Computing 27 (2–3) (2016), 229–253.

13. D. Hartman, J. Hubička, J. Nešetřil: Complexities of relational structures, Mathematica Slovaca 65 (2) (2015), 229–246.

14. D. Hartman, J. Hubička, D. Mašulovič: Homomorphism-homogeneous L-colored graphs, European Journal of Combinatorics 35 (2014), 313–323.

15. J. Fiala, J. Hubička, Y. Long: Universality of intervals of line graph order, European Journal of Combinatorics 41 (2014), 221–231.

16. J. Hubička, J. Jost, Y. Long, P. F. Stadler, L. Yang: Relations between graphs, Ars Mathematica Contemporanea 6 (2) (2012), 323–250.

17. J. Hubička, J. Nešetřil: A finite presentation of the rational Urysohn Space, Topology and its Applications 155 (14) (2008), 1483–1492.

18. J. Hubička, J. Nešetřil: Universal partial order represented by means of oriented trees and other simple graphs, European Journal of Combinatorics 26 (2005), 765–778.

19. J. Hubička, J. Nešetřil: Finite presentation of homogeneous graphs, posets and Ramsey classes, Israel Journal of Mathematics 149 (2005), 21–44.

20. J. Hubička, J. Nešetřil: Finite paths are universal, Order 21 (2004), 181–200, and, Order 22 (2005), 21–40[1].

Papers published in refereed international journals without impact factor
21. J. Hubička, M. Konečný, J. Nešetřil: A combinatorial proof of the extension property for partial isometries, Commentationes Mathematicae Universitatis Carolinae 60 (1) (2019), 39–47.

Book Chapters (refereed)
22. J. Hubička, J. Nešetřil: Ramsey classes with closure operations (selected combinatorial applications), Connections in Discrete Mathematics: A Celebration of the Work of Ron Graham (2018).

23. J. Hubička, J. Nešetřil: Universal structures with forbidden homomorphisms, Logic Without Borders: Essays on Set Theory, Model Theory, Philosophical Logic and Philosophy of Mathematics (2015), 241–264.

24. J. Hubička, J. Nešetřil: Some examples of universal and generic partial orders, Model Theoretic Methods in Finite Combinatorics: AMS-ASL Special Session, 2009, 293–318.

Papers accepted to refereed international journals

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[1]Due to editorial accident the paper appeared in the last volume of 2004 as well as in the first volume of 2005.

25. A. Aranda, J. Hubička, M. Karamanlis, M. Kompatscher, M. Konečný, M. Pawliuk, D. Bradley-Williams: Ramsey expansions of metrically homogeneous graphs, arXiv:1707.02612, 2017, Accepted to the European Journal of Combinatorics, 56 pages.

26. J. Hubička, M. Kompatscher, M. Konečný: Forbidden cycles in metrically homogeneous graphs, arXiv:1808.05177, Accepted to the Europan Journal of Combinatorics, 2018.

Papers accepted to international conferences

27. G. Barker, J. Hubička, M. Jacobs, L. Kimrová, K. Meyer, D. Peterson: Finlay, Thames, Dufay, and Paget color screen process collections: Using digital registration of viewing screens to reveal original color, accepted to proceedings of Colour Photography and Film: sharing knowledge of analysis, preservation, conservation, migration of analogue and digital materials, arXiv:2211.16076, 2022.

28. G. Belinassi, R. Biener, J. Hubička, D. Cordeiro, A. Goldman: Compiling Files in Parallel: A Study with GCC, 2022 International Symposium on Computer Architecture and High Performance Computing Workshops (SBAC-PADW), 2022.

29. J. Hubička, J. Nešetřil, P. Oviedo, O. Serra: On the Homomorphism Order of Oriented Paths and Trees, Extended Abstracts EuroComb 2021: European Conference on Combinatorics, Graph Theory and Applications (2021), 739–744.

30. G. Cherlin, J. Hubička, M. Konečný, J. Nešetřil: Ramsey expansions of 3-hypertournaments, Extended Abstracts EuroComb 2021: European Conference on Combinatorics, Graph Theory and Applications (2021), 696–701.

31. M. Balko, D. Chodounský, J. Hubička, M. Konečný, J. Nešetřil, L. Vena: Big Ramsey degrees and forbidden cycles, Extended Abstracts EuroComb 2021: European Conference on Combinatorics, Graph Theory and Applications (2021), 436–441.

32. M. Balko, D. Chodounský, N. Dobrinen, J. Hubička, M. Konečný, L. Vena: Big Ramsey degrees of the generic partial order, Extended Abstracts EuroComb 2021: European Conference on Combinatorics, Graph Theory and Applications (2021), 637–643.

33. J. Hubička: Big Ramsey degrees of the universal homogeneous partial order are finite, Algebras, Graphs and Ordered Sets (extended abstract), ALGOS 2020, 183–184.

34. M. Balko, D. Chodounský, Jan Hubička, M. Konečný, L. Vena: Big Ramsey degrees of 3-uniform hypergraphs (extended abstract), Acta Mathematica Universitatis Comenianae 88 (3) (2019), 415–422.

35. J. Hubička, M. Konečný, J. Nešetřil: Ramsey properties of edge-labelled graphs via completions (extended abstract), Acta Mathematica Universitatis Comenianae 88 (3) (2019), 801–805.

36. J. Hubička, C. Jahel, M. Konečný, M. Sabok: Extending partial automorphisms of n-partite tournaments (extended abstract), Acta Mathematica Universitatis Comenianae 88 (3) (2019), 807–811.

37. J. Hubička, J. Nešetřil, P. Oviedo: Density and fractal property of the class of oriented trees (extended abstract), Acta Mathematica Universitatis Comenianae 88 (3) (2019), 813–818.

38. A. Aranda, J. Hubička, E. K. Hng, M. Karamanlis, M. Kompatscher, M. Konečný, M. Pawliuk, D. Bradley-Williams: Completing graphs to metric spaces (extended abstract), Eurocomb 2017, Electronic Notes in Discrete Mathematics 61(2017), 53–60.

39. J. Hubička, J. Nešetřil: Ramsey theorem for designs (extended abstract), Eurocomb 2017, Electronic Notes in Discrete Mathematics 61(2017), 623–629.

40. J. Fiala, J. Hubička, Y. Long: Gaps in full homomorphism order (extended abstract), Eurocomb 2017, Electronic Notes in Discrete Mathematics 61(2017), 429–435.

41. J. Fiala, J. Hubička, Y. Long: An universality argument for graph homomorphisms (extended abstract), Eurocomb 2015, Electronic Notes in Discrete Mathematics 49(2015), 643–649.

42. J. Hubička, J. Nešetřil: Ramsey classes with forbidden homomorphisms and a closure, Eurocomb 2015, Electronic Notes in Discrete Mathematics 49(2015), 737–745

43. D. Hartman, J. Hubička, J. Nešetřil: Towards bounds of relational complexity (extended abstract), Bordeaux Graph Workshop, 2014, 17–18.

44. D. Hartman, J. Hubička, J. Nešetřil: Combinatorial bounds on relational complexity (extended abstract), The Seventh European Conference on Combinatorics, Graph Theory and Applications, CRM Series 16 (2013), 573–578.

45. J. Hubička, T. Glek: Optimizing real world applications with GCC Link-Time Optimization. GCC Developers' Summit Proceedings 2010, 25–46.

46. J. Hubička: Interprocedural optimization framework in GCC. GCC Developers' Summit Proceedings 2007, 59–68.

47. J. Hubička: Interprocedural optimization on function local SSA form. GCC Developers' Summit Proceedings 2006, 75–84.

48. J. Hubička: Profile driven optimizations in GCC. GCC Developers' Summit Proceedings 2005, 107–124.

49. J. Hubička, Z. Kovács, Z. Kovács: Visualizations on the complex plane, Computer algebra systems and dynamic geometry systems in mathematics teaching, Proceedings of "Sprout-Selecting" Conference, 12–27, 2004.

50. J. Hubička: Call graph module in GCC. GCC Developers' Summit Proceedings 2004, 64–78.

51. J. Hubička: Porting GCC to the AMD64 architecture. GCC Developers' Summit Proceedings 2003, 79–106.

Theses
52. J. Hubička, Structural Ramsey Theory and the Extension Property for Partial Automorphisms, habilitation thesis, Charles University 2020.

53. J. Hubička, Combinatorial Properties of Finite Models, dissertation thesis, 2010.

54. J. Hubička, Ramsey Properties of Universal Sets (in Czech), diploma thesis, Charles University 2002.

Other publications (selected)
55. J. Hubička, Odhad kvality fotografických materálů a metody jejich digitalizace (in Czech), Zprávy památkové péče, National Heritage Institute, 1/2016.

56. J. Hubička, Digitizing historical photographs at Šechtl and Voseček Musuem of Photography (in Czech), Digitalizace aneb konec oslích uší, National Library, Prague, 2010.

57. J. Hubička, Šechtl and Voseček Studios (in Czech), Historická fotografie, 2007.

58. Z. Dvořák, J. Hubička, P. Nejedlý and J. Zlomek: Infrastructure for Profile Driven Optimizations in GCC Compiler, project report, 2003.

59. H.J. Lu, M. Matz, J. Hubička, A. Jaeger, M. Mitchel (ed.): System V Application Binary. Interface. x86-64 Architecture Processor Supplement, 2000–2007. (Original author of specification of low-level datastructure layout and function call conventions.)

Submitted
60. S. Braunfeld, D. Chodounský, N. de Rancourt, J. Hubička, J. Kawach, M. Konečný: Big Ramsey degrees and infinite languages, arXiv:2301.13116, 2023.

61. M. Balko, D. Chodounský, N. Dobrinen, J. Hubička, M. Konečný, L. Vena, A. Zucker: Characterisation of the big Ramsey degrees of the generic partial ordeR, 2023.

62. J. Hubička: Big Ramsey degrees using parameter spaces, arXiv:2009.00967, 2023.

63. M. Balko, D. Chodounský, N. Dobrinen, J. Hubička, M. Konečný, L. Vena, A. Zucker: Exact big Ramsey degrees via coding trees, arXiv:2110.08409, 2021.

In final stages of preparation

64. J. Hubička, M. Konečný, J. Nešetřil: Semigroup-valued metric spaces: Ramsey expansions and EPPA, 20 pages.

Teaching experience

1. Lecturer of Set Thoery, Charles University, Prague, 2022, 2023
2. Lecturer of Introduction to Pigeonholes, Charles University, Prague, 2021
3. Lecturer of Algorithms and Data Structures II, Charles University, Prague, 2019, 2020
4. Lecturer of Combinatorics and graphs II, Charles University, Prague, 2018–2019
5. Lecturer of Linear Algebra, Charles University, Prague, 2017–2018
6. Lecturer of Algorithms and Data Structures I, Charles University, Prague, 2017, 2019, 2020
7. Advanced code optimization techniques used in industrial strength compilers, 2017–2023
8. Teaching assistant of Discrete Mathematics, Charles University, Prague, 2017
9. Co-lecturer of Selected topics in Combinatorics I,II (with J. Nešetřil), Charles University, Prague, 2015–2020
10. Lecturer of Math 311 — Linear Methods II, University of Calgary, 2015
11. Lecturer of Math 211 — Linear Methods I, University of Calgary, 2014
12. Lecturer of Advanced code optimization techniques used in industrial strength compilers, Charles University, Prague, 2008–2013
13. Lecturer of seminar Advanced code optimization techniques used in industrial strength compilers, Charles University, Prague, 2003–2008
14. Lecturer of workshop Digitalizace fotografií, National Technical Museum, Prague, 2009
15. Teaching assistant of Algorithms, Charles University, Prague, 2004–2007, 2009
16. Teaching assistant of Discrete Mathematics, Charles University, Prague, 2002–2004

Students
Bachelor degree
1. Matěj Konečný: Combinatorial Properties of Metrically Homogeneous Graphs, 2018 (defended)
2. Stanislav Lukeš: API for C# code generation, 2020 (defended)
3. Pablo Oviedo Timoneda: Universal intervals in the homomorphism order of digraphs, 2018–2019 (defended)
4. Linda Kimrová: Digital processing of early colour photography, 2022-=
5. Ondřej Kubánek: Improving loop optimization with histogram profiling, 2022–
6. Mikhail Beliayeu: The extension property for partial automorphisms (EPPA) of reducts of relational structures, 2021–
7. Šťastný Přemysl: LSQL language and its implementation for csv files, 2021–

Master degree
8. Matěj Konečný: Semigroup-valued metric spaces, 2019 (defended)
9. Martin Jambor: Optimizations in the GNU Compiler Collection targeted at scientific computing, 2005–2007 (defended)
10. Ondřej Bílka: Pattern Matching in Compilers, 2011–2012 (defended)
11. Martin Liška: Optimizing large applications, 2012–2013 (defended)
12. Ladislav Láska: Scalable link-time optimization, 2015–2017 (defended)
13. David Čepelík: Scalable whole program mod/ref analysis, 2019–2020 (not defended; optimization pass accepted to GCC 11)

Doctoral degree

14. Matěj Konečný: Semigroup-valued metric spaces, since 2018

15. Ondřej Bílka: Optimizing dynamic and functional languages, 2013–2020 (not defended)

Organization of conferences and service to community

1. Graphs and Networks in Context 2019 (co-organized with J. Nešetřil and M. Konečný), Charles University, Prague, 2019

2. Sparsity DocCourse Prague 2018 (co-organized with J. Nešetřil and M. Konečný), Charles University, Prague, 2018

3. Main organizer of workshops "GNU Tools Cauldron", Charles University, Prague, 2012, 2015, 2017

4. Ramsey DocCourse Prague 2016 (co-organized with J. Nešetřil), Charles University, Prague, 2016

5. Co-organizer of workshops "GNU Tools Cauldron", 2013 (Google Headquarters, Mountain View), 2014 (Cambridge), 2016 (Hedben Bridge)

6. Workshop "Space, Color", Motion, National Technical Museum Prague, 2013

7. Workshop "Legacy of three color photography", National Technical Museum, Prague, 2008

Membership in program committees

1. Midsummer Combinatorial Workshop, Charles University, Prague, 2017–2021

2. Workshop "GNU Tools Cauldron", 2012–2019

3. Ramsey DocCourse Prague 2016, Charles University, Prague, Oct–Dec 2016, March 2017

4. Workshop "Space, Color, Motion", National Technical Museum, Prague, 2013

5. Workshop "GROW 2011: 3rd International Workshop on GCC Research Opportunities", CGO, Chamonix 2011

6. Workshop "2nd International Workshop on GCC Research Opportunities", HiPEAC 2010, Pisa, 2010

7. Workshop "GCC Research Opportunities, 4th International Conference on High-Performance Embedded Architectures and Compilers", HiPEAC, Paphos, 2009

8. Workshop "Legacy of three color photography", National Technical Museum, Prague, 2008

9. Workshop "GREPS: International Workshop on GCC for Research in Embedded and Parallel Systems, 16th International Conference on Parallel Architectures and Compilation Techniques", PACT, Brasov, 2007

Awards and grants

1. IBM Faculty Award 2015

2. PIMS Postdoctoral Fellowship, 2014–2015

3. GAČR junior grant (Model theory and extremal combinatorics), 2018–2020

4. Teaching award, Charles University (for lecture and practicals on Algorithms and Datastructures I), 2020

5. MŠMT Award for Outstanding Results of Research, Experimental Development and Innovation (for results in the area of structural Ramsey theory), 2020

6. Standard GAČR grant (Ramsey theory in the context of group theory, model theory and topological dynamics), 2021–2023

Participation in research networks

1. ERC Synergy since 2019

2. STRUCO (Structures in Combinatorics), associated International Laboratory of CNRS between DI-MATIA, Prague, and LIAFA, Paris, since 2012

3. HiPEAC (European Network on High Performance and Embedded Architecture and Compilation), since 2009

4. COMBSTRU (Combinatorial Structure of Intractable Problems), 2002–2006

Lectures (selected, invited lectures emphasized)

1. *Ramsey theorem for trees with successor operation and big Ramsey degrees of relational structures*, Set Theory Seminar, Fields Institue, 2023

2. Ramsey theorem for trees with successor operation and big Ramsey degrees of relational structures, Workshop on the Geometry and Dynamics of Groups of Transformations, 2023

3. *Introduction to the Big Ramsey Degrees*, DDC and Discrete Mathematics and Optimization seminar, McGill, Montreal, 2023

4. Big Ramsey degrees and trees with successor operation, Logic Colloquium 2022, Reykjavik 2022

5. *Big Ramsey degrees for structures with forbidden substructures*, University of Vienna, December 2022

6. Big Ramsey degrees and trees with successor operation, Ultramath, Pisa 2022

7. Big Ramsey degrees and well-ordered structures, Descriptive set theory and combinatorics, Torino 2022

8. Ramsey theorem for trees with a successor operation, Toposym, Prague 2022

9. *Big Ramsey degrees of homogeneous structures*, Tutorial of 3 lectures, Winter school of abstract analysis, Hejnice 2022

10. *Introduction to the Big Ramsey Degrees*, ČVUT semminar, Prague 2022

11. Extension property for partial automorphisms: Combinatorial constructions and open problems, Czech-Slovak International Symposium on Graph Theory, Combinatorics, Algorithms and Applications, Prague 2022

12. *Characterising big Ramsey degrees of structures in non-binary languages*, AMS Spring Western Sectional Meeting 2022, special session on Ramsey Theory of infinite structures, zoom

13. *Big Ramsey degrees of homogeneous structures*, Workshop on Generic Structures 2021, Prague

14. *Higher order dualization of the Ramsey theorem and big Ramsey degrees*, South Eastern Logic Symposium 2021

15. Big Ramsey degrees of partial orders, EUROCOMB, 2021

16. *Big Ramsey degrees of homogeneous structures*, XVI International Luminy Workshop in Set Theory, 2021

17. *Ramsey classes using parameter spaces*, Oberwolfach workshop "Homogeneous Structures: Model Theory meets Universal Algebra", zoom 2021

18. *Big Ramsey degrees of the universal homogeneous parital order are finite*, ALgebras, Graphs and Ordered sets 2020 (ALGOS), Big Blue Button 2020

19. *Cycles in metrically homogeneous graphs*, 2020 CoSP Midterm Meeting, zoom 2020

20. *Big Ramsey degrees hypergraphs*, Cornell logic seminar, Ithaca 2019

21. *The extensions property for partial automorphisms*, series of 3 lectures jointly with Matěj Konečný, RUTGERS logic seminar, New Brunswick 2019

22. *Big Ramsey degrees of the 3-uniform hypergraph*, EUROCOMB, Bratislava 2019

23. On Hrushovski properties of Hrushovski constructions, Logic colloquia, Prague 2019

24. *Metrically homogeneous graphs as homogenizations of $(1, \delta)$-structures*, 2018 CMS Winter Meeting, Vancouver 2018

25. *Combinatorial proofs of the extension property for partial automorphisms*, Unifying Themes in Ramsey Theory, Banff 2018

26. *On the existence of Ramsey expansions.* Ramsey Theory in Logic, Combinatorics and Complexity, Bertinoro 2018

27. *Ramsey theorems for classes of structures with functions and relations.* Model Theory and Combinatorics, Paris 2018

28. *Ramsey properties of Hrushovski construction.* Zámeček, Hraniční zámeček 2017

29. *Ramsey theorem for designs.* European Conference on Combinatorics, Graph Theory and Applications, Vienna 2017

30. *On the existence of Ramsey expansions.* Beauty of Discrete Mathematics, Montreal 2017

31. *Automorphism Groups and Ramsey Properties of Sparse Graphs*, Workshop on Metafinite Model Theory and Definability and Complexity of Numeric Graph Parameters, Rejkjavik 2017

32. *Very sparse graphs are Ramsey*, Czech-Slovak Conference on Combinatorics and Graph Theory, Hejnice 2017

33. Series of 5 lectures at Ramsey DocCourse Prague 2016, Charles University, Prague, September 15 – December 31, 2016

34. *All those Ramsey classes (Ramsey classes with closures and forbidden homomorphisms).* Logic Colloquium, Leeds 2016

35. Porting GCC to AMD GCN microarchitecture. GNU Tools Cauldron, Hedben Bridge, 2016

36. *Porting GCC to AMD GCN microarchitecture.* SUSElabs conference, Mikulov, 2016

37. *Ramsey Classes by Partite Construction.* 2 lectures. Permutation Groups and Transformation Semigroups, EPSRC Durham Symposium, 2015

38. *An universality argument for graph homomorphisms.* Eurocomb, 2015

39. *Ramsey classes with forbidden homomorphisms and a closure.* Eurocomb, 2015

40. *Ramsey classes with forbidden homomorphisms and a closure.* Shanghai Jiao Tong University, 2015

41. Ramsey lifts of classes of intersection graphs. CanaDAM, 2015

42. *Ramsey classes with algebraic closure and forbidden homomorphisms.* Logic Seminar, University of Illinois at Urbana-Champaign, 2015

43. *Examples of Ramsey lifts.* Combinatorial Seminar, University of Illinois at Urbana-Champaign, 2015

44. Types and type based optimizations in GCC. GNU Tools Cauldron, Charles University, Prague 2015

45. *Multiamalgamation classes are Ramsey.* Homogeneous Structures, Banff 2015

46. *Ramsey classes—properties, examples and constructions.* Combinatorial seminar, Iowa State University 2015

47. Devirtualization in GCC, GNU Tools Cauldron, Cambridge, 2015

48. *Interprocedural and link-time optimization in GCC.* IBM Colloquia, New York, 2014

49. *Ramsey classes with algebraical closure and forbidden homomorphisms.* Algebraic and Model Theoretical Methods in Constraint Satisfaction, Banff, 2014

50. Collection of Finlay-Color negatives from the American Colony in Jerusalem. Space, Color, Motion, National Technical Museum, Prague, 2013

51. *Combinatorial bounds on relational complexity.* Eurocomb, Pisa, 2013

52. *Ramsey expansions of classes with non-trivial algebraic closure*, Descriptive Set Theory Seminar, Rutgers, 2014

53. *Bowtie-free graphs have Ramsey lift.* Universality and Homogeneity Hausdorff Trimester Program, Bonn, 2013

54. Constrained homomorphism orders. ČS Grafy, Litomyšl, 2012

55. Constrained homomorphism orders. Shanghai Conference on Algebraic Combinatorics, Shanghai, 2012

56. *Locally injective homomorphisms are universal.* 2nd Workshop on Homogeneous Structures, Charles University, Prague, 2012

57. Constrained homomorphism orders. Bordeaux Graph Workshop, Bordeaux, 2012

58. Link time optimization in GCC. OpenSUSE conference, Nuernberg, 2011

59. *Explicit construction of universal structures as shadows of ultrahomogeneous structures.* LMS Northern Regional Meeting and Workshop on Homogeneous Structures, Leeds 2011

60. Digital processing of early color photography. OpenSUSE conference, Nuernberg, 2011

61. *Digitální zpracování Ranné barvné fotografie.* Archivy, knihovny a muzea v digitálním světě, 2011

62. Optimizing real world applications with GCC Link Time Optimization. GCC Summit, Ottawa, 2010

63. Some examples of universal and generic partial orders. Young Researchers Forum, MFCS, 2010

64. Universal structures as shadows of ultrahomogeneous structures. Fete of Combinatorics and Computer Science 2009, Keszthely, Hungary

65. *Digitizing Historical Negatives.* 9. konference Archivy, knihovny, muzea v digitálním světě. Selected as the best presentation of the conference, National Archive, Prague, 2008

66. *Digitalizace fotografických předloh,* digitalizace fotografií, National Technical Museum, Prague 2008

67. *Interprocedural Optimization Framework.* Gelato ICE Conference & Expo, San Jose, California , 2007

68. Interprocedural optimization framework in GCC. GCC Summit, Ottawa, 2007

69. Interprocedural optimization on function local SSA form in GCC. GCC Summit, Ottawa, 2006

70. *Profile Driven Optimizations in GCC.* Gelato GCC on Itanium Improvement Workshop, Russian Academy of Sciences, Moscow, 2006

71. *Finite Paths are Universal.* COMBSTRU final workshop, Barcelona, 2006

72. Preparing of Albumen Paper. Historické fotografické techniky/Edeldrucke, Jindřichùv Hradec, 2006

73. Profile driven optimizations in GCC. GCC Summit, Ottawa, 2005

74. Call graph module in GCC (framework for intraprocedural optimization). GCC Summit, Ottawa, 2004

75. x86-64 support in GCC. GCC Summit, Ottawa, 2003

Software projects (selected)

1. Port of AMD GCN architecture, 2016–2017

2. Incremental scalable link time optimization framework in GCC, since 2009

3. Interprocedural optimization framework in GCC, since 2004

4. Port of GCC to x86-64 architecture, Architecture Binary Interface design, since 2000

5. Profile driven optimizations in GCC, 1998–2003

6. GNU Compiler Collection (GCC) i386 backend improvements, 1997–2000

7. AA-project (ASCII art library and tools), 1997–2000

8. XaoS (realtime fractal zoomer), 1995–1999

9. Koules (game), 1993–1995

Other activities

Digitization of archive Šechtl and Voseček   since 2004
Software, web pages, historical research, co-authoring texts for exhibitions, preparing digital prints from
historical negatives and cooperating on preparing the exhibitions

Co-maintainer of GNU Compiler Collection   since 2001
Maintainer of inter-procedural optimization framework, profile feedback optimization framework and x86
backend