

Curriculum vitae of Jan Hubička

Name: Jan Hubička

Born: 01/04/1978, Tábor, Czech Republic

Home address: Dukelských bojovníků 1944, Tábor, 390 03

Phone: +420 381 232613

Email: hubicka@ucw.cz

Education:

High school in České Budějovice with focus on mathematics, 1996

Master Degree in Computer Science, 2002

Faculty of Mathematics and Physics, Charles University in Prague

Concentrations: Discrete Mathematics, Compiler Design

Thesis: Ramsey Properties of Universal Sets, advisor Jaroslav Nešetřil

PhD Student, Computer Science, 2002–2010

Faculty of Mathematics and Physics, Charles University in Prague

Concentrations: Graph Homomorphisms, Universal and Generic Structures

Thesis: Combinatorial Properties of Finite Models, advisor Jaroslav Nešetřil

Employment history::

- Senior software developer at SUSE ČR s.r.o, Prague, 2000–2013
- Research fellow at Institute of Theoretical Computer Science, Charles University, Prague, 2003–2011
- Research fellow at Computer Science Institute, Charles University, Prague, 2012–2013
- PIMS Postdoctoral Fellow, University of Calgary, 2014–2015

Teaching experience:

- Teaching assistant of discrete mathematics in 2002–2004
- Teaching assistant of algorithms in 2004–2007, 2009
- Lecturer of seminar about advanced code optimization techniques used in industrial strength compilers 2003–2008
- Lectures on advanced code optimization techniques used in industrial strength compilers 2008–2010
- Lecturer of workshops on digitizing historical photography 2009–2010
- Lecturer of Math 211 — Linear Methods I, University of Calgary, 2014

Master degree students (Finished):

- Martin Jambor: Optimizations in the GNU Compiler Collection targeted at scientific computing, 2005–2007
- Ondřej Bílka: Pattern Matching in Compilers, 2011–2012
- Martin Liška: Optimizing large applications, 2012–2013

Current students:

- Ondřej Bílka: Optimizing dynamic and functional languages, PhD degree, 2013–present

Membership in program committees:

- GREPS: International Workshop on GCC for Research in Embedded and Parallel Systems, 16th International Conference on Parallel Architectures and Compilation Techniques (PACT), Brasov, Romania, 2007
- Legacy of three color photography, Prague, 2008
- GCC Research Opportunities, 4th International Conference on High-Performance Embedded Architectures and Compilers (HiPEAC), Paphos, CYPRUS, January 25-28, 2009
- 2nd International Workshop on GCC Research Opportunities, HiPEAC 2010, Pisa, 2010
- GROW 2011: 3rd International Workshop on GCC Research Opportunities, CGO, Chamonix 2011
- GNU Cauldron, Prague, 2012

Software projects (selected):

- Koules (game), 1993–1995
- XaoS (realtime fractal zoomer), 1995–1999
- AA-project (ASCII art library and tools), 1997–2000
- GNU Compiler Collection (GCC) i386 backend improvements, 1997–2000
- Profile driven optimizations in GCC, 1998–2003
- Port of GCC to x86-64 architecture, Architecture Binary Interface design, 2000–2010
- Interprocedural optimization framework in GCC, 2004–2010
- Incremental scalable link time optimization framework in GCC, 2009–2013

Other activities:

Digitization of archive Šechtl and Voseček

Software, web pages, historical research, co-authoring texts for exhibitions, preparing digital prints from historical negatives and cooperating on preparing the exhibitions

Presentations (selected):

- x86-64 support in GCC. Paper presentation at GCC Summit conference, Ottawa, 2003
- Call graph module in GCC (framework for intraprocedural optimization). Paper presentation at GCC Summit conference, Ottawa, 2004
- Profile driven optimizations in GCC. Paper presentation at GCC Summit conference, Ottawa, 2005
- Interprocedural optimization on function local SSA form in GCC. Paper presentation at GCC Summit conference, Ottawa, 2006
- Profile Driven Optimizations in GCC. Tutorial talk at Moscow GCC on Itanium Improvement Workshop, 2006
- Finite Paths are Universal. Presentation of joint result with Jaroslav Nešetřil, COMBSTRU final workshop, Barcelona, 2006
- Preparing of Albumen Paper. Tutorial talk at Historické fotografické techniky/Edeldrucke, Jindřichův Hradec, 2006
- Interprocedural Optimization Framework. Tutorial talk at GCC track of Gelato ICE, 2007
- Interprocedural optimization framework in GCC. Paper presentation at GCC Summit conference, Ottawa, 2007
- Color works of Bohumil Štastný, Legacy of three color photography, Prague, 2008
- Digitizing Historical Negatives, 9. konference Archivy, knihovny, muzea v digitálním světě, Prague, 2008
- Universal structures as shadows of ultrahomogeneous structures, Fete of Combinatorics and Computer Science 2009, Keszthely, Hungary
- Optimizing real world applications with GCC Link Time Optimization, Paper presentation at GCC Summit conference, Ottawa, 2010
- Some examples of universal and generic partial orders. Presentation of joint results with Jaroslav Nešetřil at Young Researchers Forum, MFCS, 2010

- Link time optimization in GCC. Talk at OpenSUSE conference, Nuernberg, 2011
- Explicit construction of universal structures as shadows of ultrahomogeneous structures. Presentation of joint results with Jaroslav Nešetřil at LMS Northern Regional Meeting and Workshop on Homogeneous Structures, Leeds 2011
- Digital processing of early color photography. Talk at OpenSUSE conference, Nuernberg, 2011
- Ranná barvná fotografie. Talk at Archivy, knihovny a muzea v digitálním světě.
- Constrained homomorphism orders. Presentation of joint results with J. Fiala and Y. long at ČS Grafy, Litomyšl, 2012
- Constrained homomorphism orders. Presentation of joint results with J. Fiala and Y. long at 2012 Shanghai Conference on Algebraic Combinatorics, Shanghai, 2012
- Locally injective homomorphisms are universal. Presentation of joint results with J. Fiala and Y. Long at 2nd Workshop on Homogeneous Structures, Prague, 2012
- Constrained homomorphism orders. Presentation of joint results with J. Fiala and Y. long at Bordeaux Graph Workshop, Bordeaux, 2012
- Combinatorial bounds on relational complexity. Presentation of joint results with D. Hartman and J. Nešetřil, EUROCOMB, Pisa, 2013
- Bowtie-free graphs have Ramsey lift, Universality and Homogeneity Hausdorff Trimester Program, Bonn, 2013
- Devirtualization in GCC, GNU Cauldron, Cambridge, 2014
- Interprocedural and link-time optimization in GCC, IBM Colloquia, New York, 2014
- Ramsey classes with algebraical closure and forbidden homomorphisms, Presentation of joint results with J. Nešetřil, Algebraic and Model Theoretical Methods in Constraint Satisfaction, Banff, 2014

Participation in schools and programs for university students:

- Spring school on Combinatorics, 1999, 2000, 2003, 2006, Borová Lada,
- DocCourse: Permutation groups, structures, and polynomials, P. J. Cameron, Prague, 2004

- DocCourse: Modern Methods in Ramsey Theory, Ehud Friedgut, Vojtěch Rödl, Matias Schacht, 2005
- MiniDocCourse: Ergodic Ramsey Theory: A Dynamical Approach to Static Theorems, Vitaly Bergelson, Borová Lada, 2007

Participation in research programmes:

- Universality and Homogeneity, Hausdorff Trimester Program, Bonn, 2013