

Jakub Marecek

The University of Edinburgh
School of Mathematics
James Clerk Maxwell Building
Edinburgh EH9 3JZ, UK
+44 131 650 5044
jakub@marecek.cz

Education

- Nov 2011 **Ph.D. in Computer Science**, *University of Nottingham*, Nottingham (UK).
Thesis on exploiting certain structures in general-purpose integer linear programming solvers supervised by Edmund K. Burke and Andrew J. Parkes. The U. of Nottingham studentship.
- Jul 2009 **Mgr. in Computer Science**, *Masaryk University*, Brno (CZ).
Thesis on using integer programming in course timetabling solved a benchmark problem to optimality. Used C++ and IBM ILOG CPLEX. Masaryk U. Scholarship for Excellent Students.
- Jul 2006 **Bc. in Computer Science**, *Masaryk University*, Brno (CZ).
Thesis presented a polylogarithmic algorithm for discrete optimisation in 3D.

Work experience

- Jan 2012 **Post-doc in Optimisation**, *University of Edinburgh*, Edinburgh (UK).
Jan 2014 Post-doc in the School of Mathematics, working on first-order methods for large-scale optimisation with Dr. Peter Richtárik, in the group of Prof. Jacek Gondzio. Co-developed distributed methods for the minimisation of composite functions, such as training sparse support vector machines (SVM), with strong bounds on the rate of convergence taking into account non-trivial scheduling. Used C++, boost::mpi, OpenMP, Zoltan. Funded by EPSRC.
- Nov 2011 **Research Software Engineer**, *IBM*, T. J. Watson Research Center (US/CZ).
Jan 2012 Work on question generation and answering using semantic role labelling generated by an integer linear program in the group of Dr. Jan Kleindienst. Legally, a consulting software engineer at IBM's Prague office.
- Jul 2011 **Researcher**, *Fields Institute*, Toronto (Canada).
Sep 2011 Participant in the summer programme on the Mathematics of Constraint Satisfaction.
- Feb 2010 **The Logistics of Small Things Fellowship**, *NNN Centre*, Nottingham (UK).
May 2011 Work on stochastic control in a scanning probe microscope under development at Nottingham Nanotechnology and Nanoscience (NNNC), a centre within the School of Physics and Astronomy of the University of Nottingham. Used Matlab.
- Oct 2009 **Industrial Mathematics Internship**, *ARM Ltd. R&D*, Cambridge (UK).
Apr 2010 Designed and developed a scheduler for an embedded multi-core fine-grained multi-threading processor compliant with OpenCL (*ARM Mali*). Designed and developed convex programming solvers for decoding signal in wireless communications with multiple antennas (MIMO over QAM in LTE and elsewhere). Used Matlab and MEX C.
- Until **Windows Mobile Software Developer**, *Aponia Software s.r.o.*, Brno (CZ).
Oct 2003 Co-founded what had become one of the largest vendors of in-car sat-nav in Central Europe, before TomTom bought TeleAtlas and Nokia bought Naviteq. Designed and developed *Pocket Translator 2004*, a very well selling Pocket PC application. Developed a custom GUI library and an advanced dictionary management module. Used Microsoft Embedded Visual C++.
- May 2000 **Programmer**, *BRNO CITY s.r.o.*, Brno (CZ).
Feb 2001 Developed several web-based applications including a web-mail and a message handling module for a CRM system. Used variously Perl, PHP, Java, Oracle 8i, and MySQL.

Skills

Optimisation	Design, development, and use of solvers for optimisation problems
Algorithmics	Design and analysis of advanced data structures and algorithms
Programming	Software development in C++ and Java, prototyping in Python and Matlab
Databases	Design and use of relational DBs (MySQL, Oracle) and mark-up languages (XML)
Languages	Fluent in English and Czech, with passive German and Slovak, elementary French

Service

Apr 2007	Chair of the Board of Audit , <i>Dvojka Brno</i> , Brno (CZ).
Apr 2010	Member and past chair of the board of audit at Dvojka, one of Brno's largest groups of troops within the Association of Scouts and Guides of the Czech Republic.
Jan 2004	Tutor of English , <i>Masaryk University</i> , Brno (CZ).
Jul 2006	Taught English to MU's Deaf and hard-of-hearing students. Developed an intensive course using Moodle, custom-compiled corpora, tools in Python and XSL transformations. Responsible for teaching English to the Deaf in awards from the European Social Fund (EUR 500K).
Sept 1999	Various roles , <i>DDM Junior</i> , Brno (CZ).
Jul 2007	Taught C++ programming to gifted high-school students. Member of jury of speed coding competitions organised by Czech Republic's Dept. of Education.