RNDr. Tomáš Balyo PhD

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Education

Charles University **Prague**
PhD, supervised by Roman Barták *2010–2014*
Topic: Modeling and Solving Problems Using SAT Techniques

Charles University **Prague**
Msc., supervised by Pavel Surynek *2008–2010*
Topic: Solving Boolean Satisfiability Problems

Work Experience

Karlsruhe Institute of Technology – Institute of Theoretical Informatics **Karlsruhe**
Post-doctoral Researcher in the group of prof. Peter Sanders *2014–Present*
Research and developement of Satisfiabiality solving techniques for massively parallel environments.

Orchitech Solutions **Prague**
J2EE Developer *2010*
Developement of internal identity and access management systems for a telecommunication company.

Research Interests

Satsfiability Solving and Apllications: Also related problems such as MaxSAT, QBF, SMT
Automated Planning: Used in diverse A.I. applications such as robotics, logistics, virtual agents
Hard Optimization Problems: NP-hard optimization problems solved by exact/heuristic algorithms
Parallel Algorithms: Design and implement parallel versions of NP-hard problem solvers

Selected Publications

SAT Race 2015: Tomas Balyo, Armin Biere, Markus Iser and Carsten Sinz, Artificial Intelligence vol. 241
HordeSat – A Massively Parallel Portfolio SAT Solver: T. Balyo, P. Sanders, C. Sinz, SAT 2015
Accelerating SAT Based Planning with Incremental SAT : Tomas Balyo, Stephan Gocht, ICAPS 2017
Full list of publications: `https://algo2.iti.kit.edu/balyo/index.php?page=Research`

Skills and Languages

Skills: design of parallel optimization algorithms **Programming**: C/C++, Java, C#, PhP, Javascript
Languages: English, Czech, Slovak, Hungarian - fluent, German - intermediate

Miscellaneous

Hobby developer of Computer Games: regularly taking part in the Global Game Jam since 2015
Organizing SAT Competitions: co-organizer of the 2015, 2016, and 2017 SAT Competitions
Teaching and Tutoring: teaching "Practical SAT solving" and "Automated Planning and Scheduling", supervising student Bsc/Msc theses