

Dominik Wagner

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Education

DPhil (PhD) in Computer Science

Oct 2018 – present

University of Oxford, Magdalen College, Oxford

- Research interests: logic in computer science, in particular the (semantical) foundations of probabilistic programming, verification of higher-order functional programs and automated reasoning
- Supervisors: Prof. Luke Ong, Prof. Andrzej Murawski

MSc in Mathematics and Foundations of Computer Science

Oct 2017 – Sep 2018

University of Oxford, Magdalen College, Oxford, passed with Distinction

- Thesis: **“Resolution for Higher-Order Constrained Horn Clauses”**
Supervisor: Prof. Luke Ong
- Special interests: (mathematical) logic, verification and programming languages

Preparatory phase of the Saarbrücken Graduate School of Computer Science

May – Sep 2017

Saarland University, Saarbrücken

BSc in Computer Science (minor: Mathematics)

Apr 2014 – Apr 2017

Saarland University, Saarbrücken, Grade: 1.0 (best on a scale from 1.0 to 5.0)

- FdSI Bachelor Award for outstanding achievements in the Bachelor programme
- Thesis: **“Design and Implementation of a CDCL(LA) Calculus”**
Supervisor: Prof. Christoph Weidenbach

Experience

Research Experience.....

Student assistant

Nov 2014 – Sep 2017

Max Planck Institute for Informatics, Saarbrücken

- Development of a modern CDCL-based SAT-solver used in the ground linear arithmetic solver SPASS-SATT
- Focus on redundancy deletion and generation of unsatisfiability proofs
- Experience in writing highly efficient C code and debugging and profiling tools like gdb, valgrind and gprof
- SPASS-SATT won the tracks “QF_LIA” and “Best Newcomer” at the Satisfiability Modulo Theories Competition 2018
- Supervisor: Prof. Christoph Weidenbach

Teaching Experience.....

Fundamentals of Algorithms and Data Structures

winter 2016/17

Saarland University, Teaching Assistant

Delivery of tutorial sessions, preparation of sample solutions, grading of assignment sheets and exams

Mathematical Preparatory Course

Sep/Oct 2016/17

Saarland University, Mentor

Voluntary support of the course mentoring a small group of students

Service.....

Reviewer: LICS 2019

Student volunteer: FLoC 2018, POPL 2019, ETAPS 2019

Awards and Funding (selection)

Scatcherd European Scholarship & EPSRC Doctoral Training Partnership Studentship 2018 – 2021

Scholarships covering living costs and university/college fees, respectively.

FdSI Bachelor Award 2017

Award for outstanding achievements in the Bachelor programme of Saarland University.

Scholarship holder of the German Academic Scholarship Foundation 2015 – 2018

Financial support and participation in the academic program (cross-disciplinary summer academies, student-run conferences, an English course, etc.).

Scholarship holder of the German Academic Exchange Service 2017 – 2018

Full study abroad scholarship.

Publications

- [1] Toby Cathcart Burn, Jerome Jochems, C.-H. Luke Ong, Long Pham, Steven Ramsay, and Dominik Wagner. The adequacy of HoCHC for verifying higher-order programs: with application to the decidability of the HoRS equivalence problem. under review.
- [2] C.-H. Luke Ong and Dominik Wagner. HoCHC: a refutationally complete and semantically invariant system of higher-order logic modulo theories. In *34th Annual ACM/IEEE Symposium on Logic in Computer Science (LICS)*, 2019. to appear.

Presentations

6th Workshop on Horn Clauses for Verification and Synthesis (HCVS), Prague Apr 2019

Talk: “HoCHC: a Refutationally Complete and Semantically Invariant System of Higher-order Logic Modulo Theories”

SAT/SMT/AR Summer School, Lisbon Jun 2016

Poster on unsatisfiability proofs as implemented in SPASS-SATT

Additional Skills

Programming.....

SML, C: Very good (*C was used in the implementation of a modern SAT solver*)

Coq, Java, gdb, gprof, valgrind, etc.: Good

Languages.....

German (native), English (fluent), French (good)