

CURRICULUM VITAE

Personal

Name	Dr. Stephan Schulz
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Email	schulz@eprover.org
Date of Birth	May 27th, 1967
Place of Birth	Trier, Germany
Citizenship	German
Languages	Fluent in German and English, rudimentary knowledge of French and Italian

Education

February 2000	Fakultät für Informatik, Technische Universität München, Munich, Germany Ph.D. in Computer Science (<i>Dr. rer. nat.</i>) Dissertation: “Learning Search Control Knowledge for Equational Deduction” Honors: Passed with high distinction (<i>“sehr gut”</i>)
February 1995	Universität Kaiserslautern, Kaiserslautern, Germany Diploma in Computer Science (<i>Diplom-Informatiker</i>) with minor in Physics Master’s Thesis: “Explanation Based Learning for Distributed Equational Deduction” Honors: Passed with highest distinction (<i>“mit Auszeichnung bestanden”</i>)

Research Appointments

- 9/2007** University of Miami, Miami, Florida
Invited guest researcher. Improvement of the theorem prover E for applications in large theories
- 4/2005–6/2005** ITC-irst, Trento, Italy
Postdoctoral Researcher in the MathSAT project. Continued development of the MathSAT decision procedure.
- 7/2004–3/2005** Department of Computer Science, University of Verona, Italy
Postdoctoral Researcher on issues of decision procedures and their implementation using first-order equational reasoning. Continued work on high-performance equational theorem proving.
- 4/2004–7/2004** ITC-irst, Trento, Italy
Postdoctoral Researcher in the MathSAT project. Development of a decision procedure for propositional logic with underlying theories (equality, linear arithmetic, non-linear arithmetic).
- 5/2003–3/2004** Research Institute for Symbolic Computation, Johannes Kepler Universität Linz, Austria
Postdoctoral Researcher in the IHP project CALCULEMUS funded by the European Commission. Work on automatic domain exploration and advances in equational theorem proving. As part of my work I have visited the Mathematical Reasoning Group at the University of Edinburgh, UK, (9/2003-12/2003) and ITC-irst in Trento, Italy, from (1/2004–3/2004).
- Fall 2002** University of Miami, Florida
Visiting Assistant Professor at the Department of Computer Science. Work on proof- and problem representation for first-order theorem provers.
- 2000–2003** Technische Universität München, Munich, Germany
Senior researcher in the project *E-SETHEO* funded by the German Research Council (DFG). Continued development of the monolithic equational theorem prover E and the strategy parallel theorem prover E-SETHEO (on leave for Fall 2002).

- 1997–2000** Technische Universität München, Munich, Germany
 Researcher in the project *E-SETHEO*. Full responsibility for the development of the theorem prover E.
- 1995–1997** Technische Universität München, Munich, Germany
 Researcher in the ESPRIT-BRA project 9919, *Modular Integration of Symbolic and Connectionist Processing in Knowledge Based Systems (MIX)*, funded by the European Commission. Responsible for cooperation with 5 European partners. Worked on probabilistic reasoning and machine learning, primarily for medical diagnosis.
- 1993–1994** Universität Kaiserslautern, Kaiserslautern, Germany
 Student Researcher at the Chair of Professor Avenhaus.

Teaching

- 6/2005–7/2005** University of the West Indies, Mona Institute of Applied Sciences, Jamaica
 Visiting Lecturer. Taught CS63Z “Formal Methods in Software Engineering”.
- Fall 2002** University of Miami, Coral Gables, Florida, USA
 Visiting Assistant Professor. Taught CSC322 “C Programming and UNIX” and CSC519 “Programming Languages”. Course material and lecture notes developed for the courses are available from <http://www.cs.miami.edu/~schulz>.
- 2000–2001** Technische Universität München, Munich, Germany
 Acting Lecturer. Taught “Practical Theorem Proving” (*Praktikum Beweiser*), graded practical exercises.
 The course teaches both theoretical background and practical algorithms for resolution-based theorem proving. In the accompanying exercises, the students implement a simple but complete first order theorem prover from scratch.
- 1996–1997** Technische Universität München, Munich, Germany
 Acting Lecturer. Developed and taught seminars on *Machine Learning* and *Computability*
- 1989–1994** Universität Kaiserslautern, Kaiserslautern, Germany
 Student Lecturer (*Wissenschaftliche Hilfskraft*). Repeatedly assisted Professor Jürgen Avenhaus in teaching the following courses:

- “Computability, Automata, Formal Languages, ” (*Berechenbarkeit – Maschinen – Formale Sprachen*)
- “Logic and Program Verification” (*Logik und Korrektheit von Programmen*)
- “Rewriting 1” (*Reduktionssysteme I*)
- “Rewriting 2” (*Reduktionssysteme II*)

Student Lecturer. Assisted Professor Rolf Wiehagen in teaching the practical “Algorithmic Learning Theory” (*Induktive Inferenz*)

Diploma/Masters theses supervised

- 2008** Sven Möllers, “A Framework for Aircraft Tracking with Out-Of-Sequence Measurements“, Universität Karlsruhe (co-supervised with Vesa Klumpp)
- 2007** Rohan Smith, “Strategy Scheduling as a Method to Improve the Performance of Automated Theorem Provers“, University of the West Indies
- 2005** Princeton A. Ebanks, “Selection Criteria for the Lemma-tization of the Clause Set of a Resolution-Based Theorem Prover“, University of the West Indies
- 1998** Felix Brandt, “Example Selection for Learning in Automated Theorem Proving“, Technische Universität München
- 1997** Bernhard Bockelbrink, “Wissensbasierte Ergänzung von kleinen Trainingsmengen für MLP-Anwendungen” (*Knowledge-based Enhancement of Small Training Sets for Multi-Layer Perceptrons*), Technische Universität München
- 1996** Monica Joyce Sanders, “Probabilistic Reasoning in Medical Diagnosis with Application in Clinical Toxicology” , Technische Universität München, co-supervised with Dr. Manfred Schramm and Professor Wolfgang Ertel

Other Employment and Consulting

- 4/2007–** *Project Manager Future Surveillance Technologies*, COMSOFT GmbH, Karlsruhe, Germany. Responsible for several projects in the field of civilian air traffic control, in particular for the development of the *Quadrant* ADS-B and Multilateration System for enhanced ATC surveillance. Cooperation projects with several German universities and international research partners.
- 11/2005–4/2007** System Engineer, COMSOFT GmbH, Karlsruhe, Germany. Development of software for air traffic control systems.
- 10/2001–4/2004** Consulting for *Safelogic A.B.* in Göteborg, Schweden, on the use of theorem provers in formal verification.
- 1/2002–1/2006** Work with the *Standard Performance Evaluation Corporation* (<http://www.spec.org>) on the use of E in the SPEC CPU benchmark. The prover has completed step 4 of the 5 step acceptance process, but was ultimately not selected for the benchmark.

Grants

- In 1997, I was one of the principal authors of the DFG (German Research Council) grant application Je112/9-1 (E-SETHEO). The project was funded for 3 years with two full time researchers and one graduate student.
- In 2003 and 2004 I was funded as a Visiting Young Researcher by the European Union as part of the CALCULEMUS project.
- In 2005, I received a personal travel grant (SCHU-2260/1-1) from the DFG.
- In 2008, I was awarded a personal travel grant (SCHU2260/2-1) from the DFG.
- I've contributed in minor ways to various other successful (and failing) grant applications of the *Research Group Automated Reasoning* at the Technical University of Munich.

Awards

- 2002** *Best Paper Award (First Place) at the 15th International FLAIRS Conference for A Comparison of Different Techniques for Grounding Near-Propositional CNF Formulae*
- 2002** First place in the EPR category of the CASC-18 theorem proving competition with E-SETHEO (with Dr. Reinhold Letz and Gernot Stenz)
- 2001** First place in the FOF category of the CASC-JC theorem proving competition with E-SETHEO (with Dr. Reinhold Letz and Gernot Stenz)
- 2001** First place in the CNF category of the CASC-JC theorem proving competition with E-SETHEO (with Dr. Reinhold Letz and Gernot Stenz)
- 2001** First place in the EPR category of the CASC-JC theorem proving competition with E-SETHEO (with Dr. Reinhold Letz and Gernot Stenz)
- 2000** First place in the CNF category of the CASC-17 theorem proving competition with E
- 2000** First place in the SEM category of the CASC-18 theorem proving competition with E-SETHEO (with Dr. Reinhold Letz and Gernot Stenz)

Theorem provers developed or co-developed by me have participated in all CASC competitions, over a wide range of competition classes, and consistently performed within the top group.

Academic Organization and Service

Program Chair and Co-organizer

- *Seventh International Workshop on the Implementation of Logics (IWIL-2008)*
- *IJCAR Workshop on Practical Aspects of Automated Reasoning (PAAR-2008)*
- *Fifth TPTP Tea Party (TPTPTP-2008)*
- *CICM Workshop on Empirically Successful Automated Reasoning for Mathematics (ESARM-2008)*
- *CADE Workshop on Empirically Successful Automated Reasoning in Large Theories (ESARLT-2007)*
- *Fourth TPTP Tea Party (TPTPTP-2007)*
- *IJCAR/FLOC Workshop on Empirically Successful Computerized Reasoning (ESCoR-2006)*
- *Fifth International Workshop on the Implementations of Logic (IWIL-2005)*
- *CADE Workshop on Empirically Successful Classical Automated Reasoning (ESCAR-2005)*
- *IJCAR Workshop on Empirically Successful First Order Reasoning (ESFOR-2004)*
- *Second International Workshop on the Implementations of Logic (IWIL-2001)*

Program Committees

- *International Florida AI Research Society Conference (FLAIRS-2009)*
- *International Florida AI Research Society Conference (FLAIRS-2008)*
- *International Florida AI Research Society Conference (FLAIRS-2007)*
- *International Joint Conference on Automated Reasoning (IJCAR-2006)*
- *International Workshop on the Implementations of Logic (IWIL-2006)*
- *International Florida AI Research Society Conference (FLAIRS-2006)*
- *Conference on Automated Deduction (CADE-2005)*
- *Conference on Logic for Programming and Automated Reasoning (LPAR-2005)*

- *International Florida AI Research Society Conference (FLAIRS-2004)*
- *International Workshop on the Implementations of Logic (IWIL-2004)*
- *International Florida AI Research Society Conference (FLAIRS-2003)*
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- *International Florida AI Research Society Conference (FLAIRS-2002)*
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Refereeing

- *Journal of Automated Reasoning*
- *Journal of Symbolic Computation*
- *Journal of AI Communications*
- *Journal of Information and Computation*
- *International Journal of AI Tools*
- *Conference of Automated Deduction*
- *International Conference on Tools And Algorithms for the Construction and Analysis of Systems*
- Various workshops and special tracks

Other

- I became a member of the EUROCONTROL *Surveillance Standard Task Force* in 2007. The SSTF develops new, technology-agnostic standards for the performance of Air Traffic Control Systems in Europe.
- I have been elected to the Steering Committee of the *Workshop on First Order Theorem Proving* in November 2003.

Scientific Publications

See separate publication list.

Memberships

Association for Automated Reasoning
Electronic Frontiers Foundation

References

On request.