

# Curriculum Vitae

Marvin R. G. Schiller  
[Contact details on request]

## Education

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- April 2007 – October 2010 Ph.D. at *Universität des Saarlandes*, Germany  
Thesis: *Granularity Analysis for Tutoring Mathematical Proofs*, awarded with distinction *magna cum laude*  
Design and implementation of a modeling environment for formal proofs at a level of granularity suitable for the teaching of proving skills; empirical experiments and evaluation (using AI techniques, in particular automated reasoning and machine learning)
- Sept. 2000 – Sept. 2006 “Diplom” (M. Sc.) in Computer Science with modules in Cognitive Psychology, *Universität des Saarlandes*, Germany, grade 1.0 (best possible grade, “excellent”)  
Thesis title: *Mechanizing Proof Step Evaluation for Mathematics Tutoring - the Case of Granularity*
- Sept. 2003 – March 2004 Student exchange to Sophia Antipolis, France, in the scope of the *Erasmus* program
- May 1999 “Abitur” (A-Level equivalent), Carl-von-Ossietzky-Gymnasium, Germany, grade 1.1

## Grants

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- Dec. 2010 – today Postdoctoral Research Fellowship from the *British Academy*
- February 2010 – July 2010 Ph.D. scholarship from the Graduate School of Computer Science, *Universität des Saarlandes*, Germany
- April 2007 – Dec. 2009 Ph.D. scholarship from *Studienstiftung des Deutschen Volkes e.V.* (German National Merit Foundation)
- June and July 2008 Travel grant from *Studienstiftung des Deutschen Volkes* for research visit to Carnegie Mellon University, Pittsburgh, USA

## Professional Experience

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- Dec. 2010 – today Postdoctoral Research Fellow at the *Centre for the Study of Expertise*, Brunel University, UK
- Jan. 2010 – Nov. 2010 Guest researcher at the Competence Center for e-Learning (CCeL) at the *German Research Center for Artificial Intelligence* (DFKI), Germany
- June 2008 – Dec. 2010 Assistant researcher at the Competence Center for e-Learning (CCeL) at the DFKI
- June and July 2008 Research visit at Carnegie Mellon University, Pittsburgh, USA
- Apr. 2007 – May 2008 Assistant researcher for the *Dialog Project* within the Collaborative Research Center (SFB 378) *Resource Adaptive Cognitive Processes*, *Universität des Saarlandes*, Germany
- Jan. 2006 – March 2007 Researcher for the *Dialog Project*
- July 2005 – Dec. 2005 Student Researcher (“Hiwi”) for the *Dialog Project*

## Teaching

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- April – Sept. 2009 and Oct. 2009 – March 2010 Advisor/supervisor for two cycles of the seminar “Intelligent Tutoring Systems” at *Universität des Saarlandes, Germany*
- Oct. 2006 – March 2007 Head Teaching Assistant for the core lecture “Artificial Intelligence” at *Universität des Saarlandes*
- Oct. 2002 – March 2003 Teaching Assistant for the programming lecture “*Programmierung*”, *Universität des Saarlandes*

## Publications

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### Journal Articles and Chapters in Books

- [SDB08] Schiller, M., Dietrich, D. and Benzmüller, C. Proof Step analysis for proof tutoring – a learning approach to granularity. *Teaching Mathematics and Computer Science*, 6 (2):325-343, 2008.
- [BSS10] Benzmüller, C., Schiller, M. and Siekmann, J. Resource-bounded Modelling and Analysis of Human-level Interactive Proofs. In *Resource Adaptive Cognitive Systems*. Cognitive Technologies Series, pages 263-283, Springer, 2010.

### Reviewed Articles in International Conference Proceeding

- [SB09a] Schiller, M. and Benzmüller, C. Presenting Proofs with Adapted Granularity. In *KI 2009: Advances in Artificial Intelligence, 32nd Annual German Conference on AI*, LNCS, volume 5803, pages 289-297, Springer, 2009.
- [SB09b] Schiller, M. and Benzmüller, C. Granularity-Adaptive Proof Presentation. *International Conference on Artificial Intelligence in Education (AIED 2009), Frontiers in Artificial Intelligence and Applications*, volume 200, pages 599-601, IOS Press, 2009.
- [SB09c] Schiller, M. and Benzmüller, C. Proof Granularity as an Empirical Problem?. In *Proc. 1<sup>st</sup> Intl. Conference on Computer Supported Education (CSEDU 2009)*, pages 350-354, INSTICC Press, 2009.
- [BDSA07] Christoph Benzmüller, Dominik Dietrich, Marvin Schiller, and Serge Autexier. Deep inference for automated proof tutoring. In *KI 2007: Advances in Artificial Intelligence. 30th Annual German Conference on AI*, LNAI, volume 4667, pages 435-439, Springer, 2007.
- [SBV06] Marvin Schiller, Christoph Benzmüller, Ann Van de Veire. Judging Granularity for Automated Mathematics Teaching. *13<sup>th</sup> Intl. Conference on Logic for Programming, Artificial Intelligence and Reasoning (LPAR-13)*, Phnom Penh, Cambodia, 2006, [www.lix.polytechnique.fr/~hermann/LPAR2006/short/submission\\_147.pdf](http://www.lix.polytechnique.fr/~hermann/LPAR2006/short/submission_147.pdf).
- [BHL<sup>+</sup>06a] Christoph Benzmüller, Helmut Horacek, Henri Lesourd, Ivana Kruijff-Korbajova, Marvin Schiller, and Magdalena Wolska. A corpus of tutorial dialogues on theorem proving; the influence of the presentation of the study-material. In *Proceedings of the International Conference on Language Resources and Evaluation (LREC 2006)*, Genoa, Italy, 2006, ELDA, [http://hmk.ffzg.hr/bibl/lrec2006/pdf/778\\_pdf.pdf](http://hmk.ffzg.hr/bibl/lrec2006/pdf/778_pdf.pdf).

- [BHL<sup>+</sup>06b] Christoph Benzmüller, Helmut Horacek, Henri Lesourd, Ivana Kruijff-Korbajova, Marvin Schiller, and Magdalena Wolska. DiaWOz-II - A Tool for Wizard-of-Oz Experiments in Mathematics. In *Proceedings of the 29th Annual German Conference on Artificial Intelligence*, LNAI, volume 4314, pages 159-173, Springer, 2006.
- [SB06] Marvin Schiller and Christoph Benzmüller. Granularity judgments in proof tutoring. In *Poster papers at KI 2006: Advances in Artificial Intelligence: 29th Annual German Conference on AI*, Bremen, Germany, 2006, <http://www.ags.uni-sb.de/~chris/papers/W33.pdf>.

### **Further Presentations at Conferences and Workshops**

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- Invited presentation “Adaptive Assertion-Level Proofs”, Workshop *EMSQMS*, Edinburgh, UK, July 20<sup>th</sup>, 2010
- Presentation “Human-Oriented Proof Techniques are Relevant for Proof Tutoring”, *Workshop on Mathematically Intelligent Proof Search*, Paris, France, July 10<sup>th</sup>, 2010
- Presentation “Automated Granularity Judgments for Proof Steps: A Learning Approach”, Edinburgh University, UK, June 8th, 2010
- Poster presentation and system demonstration at *Deduktionstreffen 2009* in Bremen, Germany, October 15th and 16th, 2009.
- Presentation at Carnegie Mellon University in Pittsburgh (USA) “A Learning Approach to Step Size in Proof Tutoring”, July 10<sup>th</sup>, 2008.
- Presentation “Granularität von Beweisschritten in Tutoriellen Dialogen”, Saar-Weser-Workshop, DFKI Bremen, Germany, May 15<sup>th</sup>, 2008.
- Poster (and system demonstration) at *Deduktionstreffen 2008* in Saarbrücken, Germany, March 17<sup>th</sup> and 18<sup>th</sup>, 2008.
- Presentation “Using Omega for Proof Tutoring in Activemath”, CIAO Workshop 2009 in Darmstadt, Germany, February 21<sup>st</sup>, 2008.
- Presentation “Automatisierte Analyse von Beweisschritten in Lerndialogen - Das Problem der Granularität”, Doctoral Symposium of *Studienstiftung des Deutschen Volkes e.V.*, Bonn, Germany, October 10<sup>th</sup>, 2007.
- Presentation “Towards Computer-Assisted Proof Tutoring”, JEM Workshop “Identifying and supporting mathematical communities (of practice) in educational scenarios”, SCOOP-2007, Bremen, Germany, August 30<sup>th</sup>, 2007.
- Presentation “Proof Step Analysis for Proof Tutoring - A Learning Approach to Granularity”, First Central- and Eastern European Conference on Computer Algebra- and Dynamic Geometry Systems in Mathematics Education (CADGME), Pecs, Hungary, June 21<sup>st</sup>, 2007.
- Presentation “Towards the Mechanization of Granularity Judgments for Mathematics Tutoring”, 15. CLAM - INKA - OMRS Workshop, CIAO-2006, Braunshausen, Germany, April 6<sup>th</sup>, 2006.
- Presentation “Studying Tutorial Dialog in Mathematics: A Wizard-of-Oz Tool, an Experiment, and a Case Study on Granularity”, MathDIALOG Workshop on Tutorial Natural Language Dialog in Mathematics, Saarbrücken, Germany, March 14<sup>th</sup>, 2006.
- Presentation “Granularity in Mathematical Dialog”, Theorema-Ultra-Omega Workshop, Saarbrücken, Germany, November 15<sup>th</sup>, 2005.
- Presentation “A Wizard of Oz Study in Mathematics”, 1. Saarbrücken-Nancy Workshop on Higher-order Logic and Hybrid Logics, Saarbrücken, Germany, May 3<sup>rd</sup>, 2005.

## **Further Experiences**

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January 2008	Selection panel member for student grant applicants at <i>Studienstiftung des Deutschen Volkes</i>
August 2006	Participant in the 18th European Summer School in “Logic Language and Information”, University of Malaga, Spain
July 2001 – July 2003	Member of the computer sciences student's council (Fachschaft), Universität des Saarlandes
June 1999 – August 2000	Caretaker for disabled adults at <i>Camphill Communities</i> , Northern Ireland (replacing compulsory military service)

## **Memberships**

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- GI (German Association for Informatics, subscription)
- Freunde der Saarbrücker Informatik (Supporters of Informatics in Saarbrücken, subscription)

## **Technologies und Skills**

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- Programming (currently Java, Lisp, formerly C++, SML)
- Object-oriented design, UML
- Web technologies: XML-RPC, PHP, HTML, databases (SQL)
- LaTeX, SVN, CVS

## **Languages**

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- German (native speaker)
- English (fluent, working language)
- French (fluent)
- Turkish (basics)