

Curriculum Vitae

Prof. Dr. Rolf Drechsler

Personal Data

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Education

- 1988-1992 Student of Mathematics and Computer Science , J.W. Goethe-Universität in Frankfurt am Main, Germany
- 1992 Diploma in Computer Science, J.W. Goethe-Universität in Frankfurt am Main, Germany, Advisor: Prof. Dr. B. Becker
 Thesis (in German): *Synthesis of Fully Testable Adders under the Robust Path-Delay Fault Model*
- 1995 Dr. phil. nat. (summa cum laude), J.W. Goethe-Universität in Frankfurt am Main, Germany, Advisor: Prof. Dr. B. Becker
 Thesis (in German): *Ordered Kronecker Functional Decision Diagrams and their Applications*
- 1999 Habilitation, Albert-Ludwigs-Universität in Freiburg im Breisgau, Germany, Advisor: Prof. Dr. B. Becker
 Topic (in German): *Automation of Synthesis and Verification in Computer Aided Circuit Design*

Scientific Career

- 1992 Researcher in the group of Prof. Dr. G. Hotz, Department of Computer Science, Universität des Saarlandes, Germany
- 1993-95 Researcher in the group of Prof. Dr. B. Becker, Department of Computer Science, J.W. Goethe-Universität in Frankfurt am Main, Germany
- 1995-1996 Researcher in the group of Prof. Dr. B. Becker, Faculty of Applied Science, Albert-Ludwigs-Universität in Freiburg im Breisgau, Germany
- 1996-2000 PostDoc in the group of Prof. Dr. B. Becker, Faculty of Applied Science, Albert-Ludwigs-Universität in Freiburg im Breisgau, Germany
- 2000-2001 Senior Engineer (Corporate Technology), Siemens, Munich, Germany
- 2001-2002 Professor (C3) for Computer Architecture, Universität Bremen, Germany
- since 2002 Professor (C4 - since July 2008 W3) for Computer Architecture, Universität Bremen, Germany
- since 2011 Director of the Department of Cyber-Physical Systems at the German Research Center for Artificial Intelligence (DFKI) in Bremen, Germany
- since 2012 Term Member, Duke University, USA
- 2014-2016 International Guest Professor, IIT Kharagpur, India
- since 2018 Adjunct Professor at Indian Statistical Institute, India

Selected Professional Activities

- **Publications:** In the last 10 years, the applicant published more than 10 books and 200 scientific papers in international journals and conferences (as listed in DBLP). The complete list of publications can be found at:
<http://www.informatik.uni-bremen.de/agra/ger/pub.php?search=Rolf%20Drechsler>
- **Conferences:** Member of Program Committees of numerous conferences, e.g., DAC, ICCAD, DATE, ASP-DAC, FDL, MEMOCODE, EMO, FMCAD, Symposiums Chair ISMVL 1999 and 2014, Topic Chair “Formal Verification” DATE and DAC, General Co-Chair FDL 2016, General Co-Chair ETS 2018
- Regular **reviewer** for journals, conferences, awards, e.g., ACM TODAES, IEEE TC, IEEE TCAD, IEEE Design & Test, DFG, DAAD, ITG, AvH, NSERC, MIUR, ISF, FWO, ACM Outstanding Ph.D. Dissertation Award in EDA, Best Paper Award Selection Committee for ACM TODAES, EDAA Achievement Award
- **Editor** of books and journals, e.g. Associate Editor of IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, ACM Journal on Emerging Technologies in Computing Systems, International Journal on Multiple-Valued Logic and Soft Computing, Design Automation for Embedded Systems, IET Cyber-Physical Systems: Theory & Applications, IEEE Transactions on Very Large Scale Integration Systems (TVLSI)
- **Member of professional interest groups**, e.g., Speaker of Fachgruppe 3: *Methoden des Entwurfs und der Verifikation digitaler Schaltungen und Systeme* of the German Computer Society (GI), *Chair of Technical Committee of Multiple-Valued Logic* of the Institute of Electrical and Electronics Engineers (IEEE)
- **IEEE Fellow**
- **Vice-Rector** for Research and Young Academics at University of Bremen, Germany 2008-2013
- **Dean** of the Faculty of Mathematics and Computer Science at University of Bremen, Germany since 2018
- Member of the **DFG Review Board** (German Research Foundation) since 2016
- **Founder of the Graduate School** of Embedded Systems (GESy) jointly with Prof. Dr. J. Peleska
- **Founder and Coordinator of the Graduate School** System Design (SyDe) founded within the German Excellence Initiative.
- **Nominating host:** Research award of the Alexander von Humboldt Foundation (AvH) for Prof. K. Roy (Purdue, USA) in 2010 and Prof. K. Chakrabarty (Duke, USA) in 2014
- **Best paper awards** at the *Haifa Verification Conference (HVC)* 2006, *Forum on specification & Design Languages (FDL)* in 2007 and 2010, *IEEE Symposium on Design and Diagnostics of Electronic Circuits and Systems (DDECS)* in 2010, *ACM/IEEE International Conference on Computer Aided Design (ICCAD)* in 2013 and 2018
- **Berninghausen Award** for Excellence in Teaching at University of Bremen, 2018

Funded Projects: The applicant has been PI or Co-PI on more than **25 grants** funded by the German Research Foundation (DFG), the German Federal Ministry of Education and Research (BMBF), the European Union (EU), the German Academic Exchange Service (DAAD), and several industrial partners. Together, these grants have provided more than **25 million Euro** of funding allocated to the applicant's research group. This includes joint projects **together with partners from academia** (e.g. Prof. K. Chakrabarty, Prof. G. De Micheli, Prof. K. Roy, Prof. R. Brayton) **and industry** (e.g. AMD, Bosch, Concept Engineering, Ferchau, Infineon, Intel, Mentor Graphics, NXP, Siemens). In the following, selected projects are listed.

- **Basic research:** Projects funded by the German Research Foundation (DFG) since 1996 as primary investigator or co-investigator (English title translated in brackets)
 - „HDL-basierte Synthese und Verifikation für programmierbare Logic-In Memory Architektur“ (HDL-based Synthesis and Verification for Programmable Logic-in-Memory Architectures)
 - Reinhart Koselleck-Projekt „Entwicklung eines durchgängigen Verifikationsablaufes für den ESL Entwurf“ (Development of a Continuous Verification Flow for ESL Design)
 - One project (P4: Formalizations and properties of plans) in the Collaborative Research Center (CRC) “EASE – Everyday Activity Science and Engineering”
 - Two projects (P1: Predictor – Function, P2: Heuristic, Statistical and Analytical Experimental Design) in the Collaborative Research Center (CRC) “Farbige Zustände”
 - „MANIAC: BDD Manipulation für Approximate Computing“ (MANIAC: BDD Manipulation for Approximate Computing)
 - „Formale Verifikation von Schaltungen unter Verwendung von Informationen der Hochsprache“ (Formal Circuit Verification using High-Level Information)
 - „Effiziente Erfüllbarkeitsalgorithmen für die Generierung von Testmustern“ (Efficient Proof Techniques for Test Pattern Generation)
 - „Formaler Robustheitsnachweis im computergestützten Schaltkreisentwurf“ (Formal Robustness Checking in Electronic Design Automation) in collaboration with Dr. G. Fey (Bremen)
 - „Qualitätsorientierte Synthese großer Funktionen in reversibler Logik“ (Quality-driven Synthesis of Large Functions in Reversible Logic)
- **Application:** Projects on the development of formal methods with industrial partners, e.g., AMD, Bosch, IBM, Infineon Technologies, Intel, NXP, Philips, Siemens, since 2001 – partially in the context of projects funded by the BMBF as
 - Subcontractor: VALSE-XT, URANOS, Verisoft, MAYA, Herkules, RESCAR
 - Consortium member/coordinator: Verisoft XT, SANITAS, VisES, SolVerTec, SPECIFIC, EffectiV, Selfie, CONFIRM, CONVERS, SecRec, SATiSFy
- **International:** Since 1999 participation in projects funded by EU and DAAD with partners e.g., from Dallas, Duke/Durham, Haifa, Paris, Purdue/Lafayette, Tokyo, Toronto, Kolkata, Shanghai
 - EU: “DIAMOND - Diagnosis, Error Modelling and Correction for Reliable Systems Design”
 - DAAD: “Design Methodology for Embedded Systems” jointly with Dr. G. Fey (Bremen) in collaboration with University of Tokyo