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Curriculum vitae

Personal

birth	6. 6. 1965 in Bad Honnef, Germany
marital status	unmarried
nationality	German

Education and career

education

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| 7. Feb. 07 | Habilitation in Computer Science at the Faculty of Engineering, Christian-Albrechts-University, Kiel, Germany. Title of the habilitation thesis: <i>Object-connectivity and observability for class-based, object-oriented languages</i> . External reviewers Prof. Dr. Michael Mendler (University Bamberg) Prof. Dr. Gordon Plotkin (University Edinburgh), Prof. Dr. Frank de Boer (CWI Amsterdam, University Leiden), Prof. Dr. Davide Sangiorgi (University Bologna). |
| 12. Nov. 98 | Doctorate of Engineering (Dr.-Ing.) in Computer Science at the Technical Faculty, Friedrich-Alexander-University, Erlangen-Nürnberg, Germany. Title of the doctoral thesis: <i>"Polarized Higher-Order Subtyping"</i> . Evaluation "very good". Date of submission: 8. Jan. 1998, defended: 12. Nov. 1998. Reviewers: Prof. Dr. Horst Müller (University Erlangen-Nürnberg), Prof. Dr. Giorgio Ghelli (University Pisa). |
| 31. Mar. 92 | Diploma in Computer Science (Dipl.-Inf. Univ.) at the Faculty of Engineering Sciences, Friedrich-Alexander-University, Erlangen-Nürnberg. Title of the diploma thesis: <i>"Completeness of a proof system for Hennessy-Milner logic with recursion"</i> (in German). Overall grade: 1.2 (very good "with distinction"), grade of the diploma thesis: 1.0 ("very good"). |
| Nov. 86 – Mar. 92 | Student of Computer Science (Diplomstudiengang Informatik) at the Friedrich-Alexander-University, Erlangen-Nürnberg. Minor subject: physics with specialization on solid state and quantum physics. |
| June 84 | Abitur (German high school diploma) |
| Sept. 75 – July 77 | Joseph-Hofmiller-Gymnasium in Freising |
| Sept. 77 – June 84 | Rhön-Gymnasium Bad Neustadt a.d. Saale |
| Aug. 71 – July 75 | Elementary schools in Lemgo, Suttrop, and Freising |

Positions held

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| since Sept. 10 | Full professor at the Department of Informatics of the University of Oslo, in the group <i>"Precise Modelling and Analysis"</i> . |
| since Nov. 08 - Aug. 11 | Associate professor (<i>"førsteamanuensis"</i> in Norwegian) at the Department of Informatics of the University of Oslo, in the group <i>"Precise Modelling and Analysis"</i> . |
| Aug. 06 – Oct. 08 | Senior researcher (4 years with 25% teaching obligation, financed by the Credo-project and partly by the department) at the Department of Informatics of the University of Oslo, in the group <i>"Precise Modelling and Analysis"</i> . Research (mainly within the EU project <i>Credo</i>), teaching, and supervision. |

Education and career (continued)

Feb. 97 – Feb. 06	Scientific assistant (“Habitationsstelle”) at the chair of Software Technology (Prof. Dr. de Rover) at the University Kiel. Various teaching obligations and collaboration in different international projects.
April 94 – Jan. 97	Scientific assistant at the chair of Computer Networks and Communication Systems (Prof. Dr. Herzog) at the University Erlangen-Nürnberg. Employed at a project position, but with different teaching obligations, as well. Collaboration within different projects.
winter term 90 – winter term 92	student teaching assistant, different tasks within the SFB sub-project “Specification and verification of distributed systems” (teaching assistant, project work).
winter term 88 – winter term 89	student teaching assistant for the lectures <i>Logic and Recursion Theory I and II</i> at the chair of Theoretical Computer Science, University Erlangen-Nürnberg.

Additional jobs

May 86 – Oct. 86	Work as non-medical aide at the district hospital Mellrichstadt.
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Military resp. community service

Aug. 84 – March 86	Community service at the district hospital Mellrichstadt.
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National and international projects

I was involved in the following projects and (in many cases) in their application, i.e., proposal writing, often contributing organizationally, and of course, contributing scientifically.

DiverseloT	(2017–?). <i>Diversification for Resilient and Trustworthy IoT-systems</i> . IKTPLUSS project (NFR funding scheme “ICT and digital innovation”), with partners SINTEF, University of Oslo, and TellU Cloud AS. Academic collaborator at UiO. Status of the project is the so-called “phase A”, i.e., the project proposal is short-listed for the final evaluation round, end of 2017. Project writing.
IoTSec	(2015–) IoTSEC (Security in IoT for Smart Grids) is a NFR-funded national research project to promote the development of a safe and secure Internet-of-Things (IoT)-enabled smart power grid infrastructure. My role is academic collaborator.
RailCons	(2015–2018) Automated Methods and Tools for Ensuring Consistency of Railway Designs. NFR funded industrial PhD project. Main partners UiO and RailComplete AS. Collaboration with Chalmers, Sweden and Oxford, UK. Project leader.
DAAD-NFR exchange project	(2015/2016) GoRETech “ <i>Go Runtime Enforcement Techniques</i> ”, 2-years bilateral collaboration between the University of Oslo and the University Darmstadt, Germany within the DAAD-NFR PPP programme of person exchange. Project leader at the Norwegian side.
DAAD-NFR exchange project	(2015/2016) SMT4ABS “ <i>Combining SMT-Solving with Type Checking for Real-Time ABS Programs</i> ”, 2-years bilateral collaboration between the University of Oslo and the University RWTH Aachen, Germany within the DAAD-NFR PPP programme of person exchange. Project writing and member.
ConSeRNS	(2014 –) “Concurrent Security and Robustness for Networked Systems”, member of the ConSeRNS Strategic Research Initiative for information security, University of Oslo. Project member.
COST IT 1492	(from 2014 on) “ <i>ICT COST Action IC1402 Runtime Verification beyond Monitoring (ARVI)</i> ”. Norwegian representative in the Management Committee & STSM committee
EternalS	(2010/2011) FP7 EU Coordination Action “ <i>Trustworthy Eternal Systems via Evolving Software, Data and Knowledge</i> ” EternalS. External expert for task force 2 (“Time Awareness and Management”).
DAAD-NFR	

(continued)

- exchange project (2010/2011) HySmart “*Hybrid Systems Modeling and Analysis with Rewriting Techniques*”, 2-years bilateral collaboration between the University of Oslo and the University of Aachen, Germany within the DAAD-NFR PPP programme of person exchange. Partner at the Norwegian side.
- COST IT 0701 (2008–2012) “*Formal Verification of Object-Oriented Software*”, European COST action. The project had approximately 35 partner sites.
- HATS (2009–2013) “*Highly Adaptable and Trustworthy Software using Formal Models*”. European Union large-scale integrated project (IP) within the framework of FP7, in the work programme FET Proactive Initiative, ICT forever yours (ICT-FY), objective ICT-2007.8.6. The project consisted of 9 (originally 8) academic and 3 industrial partners. Project member.
- DAAD-NFR exchange project (2008/2009) Avabi “*Automated validation for behavioral interfaces of asynchronous active objects*”. 2-years bilateral collaboration between the University of Oslo and the University Kiel within the DAAD-NFR PPP programme of person exchange. Project leader at the Norwegian side.
- Credo (1. Sept. 06 – 31. Aug. 09) “*Modelling and analysis of evolutionary structures for distributed services*”. European project within the framework of FP6, priority 2, “Information Society Technologies”, call 5, activity IST-2005-2.5.5 Software and Services, project number IST-33826. Academic partners: CWI, The Netherlands; University Oslo, Norway; CAU Kiel, Germany; TU Dresden, Germany; University Uppsala, Sweden; United Nations University, Macao, China. Industrial partners: Almende, The Netherlands; Rikshospitalet – Radiumhospitalet HF, Norway. Norsk Regnesentral, Norway.
- Omega (2002 – 2004) European IST-2001-33522 project: “*Correct Development of Real-Time Embedded Systems*”. Project partners: Verimag, University Grenoble, France; Centrum voor Wiskunde en Informatica, The Netherlands; Christian-Albrechts-Universität, Germany; University Nijmegen, The Netherlands; Weizmann Institute, Israel; Office, Germany. Industrielle partners; EADS SPACE Transportation, France; France Telecom R & D, France; Israeli Aircraft Industries, Israel; National Aerospace Laboratory, The Netherlands. Project member
- MobiJ-I: (15. Sept. 01 – 14. Sept. 04) “*Assertional methods for mobile asynchronous channels in Java*”. Bilateral German-Dutch (DFG-NWO) project RO 1122/9-1, RO 1122/9-2. Partners: University Kiel; CWI, Amsterdam; LIACS, Leiden. Project writing.
- MobiJ-II: (15. April 05 – 14. April 08) “*Formal Methods for Components and Objects*”. Funded in the same way and with the same partners as MobiJ-I, RO 1122/9-4. Project writing.
- VIRES (1. May 97 – 30. Apr. 00) “*Verifying Industrial Reactive Systems*”. European 4th Framework Esprit Project 23498 . Academic project partners: University Eindhoven, The Netherlands; Verimag, University Grenoble, France; CAU Kiel, Germany; University Liège, Belgium, Weizmann-Institute, Israel. Industrial partners: Intracom, Greece. Project member
- SFB 182 (Jan. 89 – Dec. 98) DFG (German Research Council) Sonderforschungsbereich SFB 182 (Multi-processor- and network configurations), participant in sub-project C2: “*Specification and verification of distributed systems*”. Project writing.
- ARC project (July 95 – June 98) ARC exchange project: “*Co-development of object-oriented programs in LEGO*” (ARC is the Academic Research Council, a joint organization of the German Academic Exchange Organization (DAAD) and the British Council (BC)). Project partners: University Erlangen and LFCS, University Edinburgh. Project leader.
- ARC project (Jan. 92 – Dec. 94) ARC exchange project: “*Mathematical foundations for the refinement of distributed systems*”. Project partners: University Erlangen and LFCS, University Edinburgh. Project member.

Practical software and tool development

My research was and is mostly concerned with formal methods and theoretical computer science, often with an eye towards practical relevance. Besides working on the theoretical foundations, I was involved in a couple of projects also directly in the software development, the coding itself, and the application of different analysis and verification tools. Sometimes, the software development took place, resp. takes place together with industrial partners. Links to the some of the software can be found via my home page, in particular via

<http://heim.ifi.uio.no/msteffen/software.html>

mostly pointing to git-repositories and/or online documentation, if still available. Many of the master theses I supervised, besides being based on formal semantic theories, included also developing a tool or prototype (especially in Oslo).

RailCons	In the project, we develop a validation software for a railway design framework (using among other technologies Datalog). The actual tool development, coding, and integration is done by a PhD student (I am his main supervisor).
GoRETech:	In the project, we developed a taint analyzer for the Go language, i.e., a static analysis tool doing data flow analysis concerning security-related problems (injections, information leakage). Together with the other project participants, I contributed to the design and implementation of the tool. Most of the actual coding was done by a Master student.
Vires:	The project developed a considerable amount of our own analysis tools (especially of model checkers resp., in connection with model checking) as well as modelling and validation of an industrial wireless ATM protocol. <ul style="list-style-type: none"> – Amongst other tasks, I was responsible (together with 2 project partners) for the <i>specification</i> and the <i>modelling</i> of the case study, using commercial SDL modelling and analysis tools. Furthermore, I applied model checkers, in particular Spin, to the case study to validate and verify it (in cooperation mainly with the TU Eindhoven and the CWI, Amsterdam). The latter cooperation with these partners led to an analysis tool for ameliorating the state space explosion problem for such protocols. – Within a further work package of the project, for which I was responsible (together with TU Eindhoven and Verimag, Grenoble), I developed and implemented a program for the automated, heuristic abstraction based on acceleration techniques for language transducers (in <i>ocaml</i>).
MobiJ I:	Part of the project was the development of a “verification condition generator”, basically a kind of compiler translating annotated programs into lemmas of a theorem prover, in this case PVS. Within the project, I collaborated on the design and the theory of the tool. The verification tool itself was implemented (in Java) by E. Ábrahám within her doctoral thesis.
MobiJ II:	In cooperation with the University Kiel, we developed within MobiJ-II a black-box <i>test</i> -tool for Java-programs. The tool is based on observational semantics as developed in MobiJ, similar to the one I formalized in my habilitation thesis.
“programming-in-the-many”	The yearly course was designed as <i>collaborative</i> software project. It was an 8-hours per week course, which I designed and taught 5 times, for students in their final semesters. The software and tool development in the course was carried put by up-to 30 students, all collaborating on submodules of one <i>common</i> project.

Research

Research areas

static analysis
(of object-oriented and

Research (continued)

- concurrent languages): Apart from the work on type systems in the narrower sense, I worked on static analysis and “non-standard” type/effect systems in the context of concurrent, multithreaded languages. That includes more recent work on type systems for safe use of *locks* and *transactions* as well as older works on synchronous closing of communicating systems (partly categorized below under “model checking”), which were based on data-flow analysis as well. More recently, I applied static analysis techniques in particular for security-related angles (information flow and taint analysis). ([11, 22, 17, 71, 27, 44, 47, 51, 55, 21, 72, 86, 6, 86, 66, 14, 67, 12, 15])
- observable behavior
and full abstraction
of OO languages: During the mentioned activities concerning the proof-theoretical account of aspects of multithreaded Java, I became interested in the *observable*, behavior of class-based, object-oriented programs, i.e., the fundamental question of full abstraction for such programs. Observational equivalence equates two program phrases when no context exists able to differentiate between them and is a fundamental question in the semantics of programming languages. ([68, 35, 37, 39, 40, 43, 75, 77, 78, 92])
- Hoare logics
for (multi-threaded)
OO languages: In contrast to the functional and type-theoretical semantical theories I dealt with in my PhD thesis, I became interested in other important aspects of object-oriented programs such as *state*, in particular in the form of the heap, and concurrency in the form of *multithreading*. Besides that, the emphasis shifted to methods for the *verification* of object-oriented programs. Inspired by language features as found in Java, I worked in the MobiJ-projects on the Hoare-style verification of multithreaded Java-like programs. Also the works on *lazy behavioral subtyping* can be seen as falling under this rubric: The techniques give more flexible use of Hoare-logic like proof systems for programs organized in inheritance hierarchies. The focus there is to organize the proof structure in such a way that it allows modular, incremental proofs when new classes are added. ([28, 32, 38, 46, 48, 49, 74, 76, 79, 73, 29, 9])
- model checking,
runtime-verification
testing: Inspired on the work on observability of object-oriented languages, I worked on synthesizing test drivers for such languages and furthermore to explore (by simulation and model-checking) models using rewriting. Mainly in the context of the Vires-project, I did research on the verification of communication protocols based on *model checking*. Motivated by a concrete case study given in SDL, a standardized protocol description language, the focus of that research had been to design theories, methods, and practical approaches to ameliorate the state explosion (using Spin). Other work was doing *bounded* model checking (for hybrid systems), approximative reachability analysis for hybrid systems, and making use of the symbolic model checker SMV for checking PLC programs. Also the rule-based validation of railway designs (using Datalog, a Prolog-variant) can be seen as a form of model checking. ([24, 31, 30, 25, 50, 54, 57, 58, 41, 36, 5, 3, 4, 7, 69])
- type theoretical
foundations of OO: My doctoral thesis was concerned with the type theoretic resp. proof theoretic foundations λ -calculi with higher-order type systems with subtyping, which have been investigated as functional core calculus for object-oriented concepts and powerful enough to represent subtyping, inheritance, encapsulation, and late-binding. Based on a related functional encoding on object-oriented features, I worked also on the formal verification of such programs with the help of *theorem-provers*, in particular in the constructive proof assistant *Lego*. ([93, 59, 60, 63, 81, 82]). Note: Some of my work about data-flow and static analysis is phrased with type-theoretic terminology (using flow types, constraints, and effect systems), but that line of research is listed under the rubric “static analysis”.

Research (continued)

- process algebraic results Different results dealt with process-algebraic formulations, like the π -calculus, and recently a timed variant of the ambient calculus. Some work involved also Petri-nets. Also the work in connection with observability and full abstraction had a process-algebraic flavor, working with concurrent object calculi. ([61, 62, 70, 16, 2, 1, 85, 84])
- miscellaneous: Besides the mentioned topics, I worked also on automata-theoretic results for parameterized model checking of infinite state systems. A few papers are concerned with proof-systems for *hybrid systems*, a well-known formal model for systems combining discrete and continuous behavior, and furthermore efficient strategies for *bounded model checking* linear hybrid systems. Further papers deal with abstraction, composition, and model checking for parameterized systems, the semantics and expressivity of *modal transition systems*, and semantics of weak memory model, among other things. ([23, 33, 34, 36, 41, 42, 45, 52, 53, 56, 61, 64, 80, 65] ...)

Conference organization

- iFM'17, iFM10 integrated Formal Methods 2010, PC member
 ESOCC'17 local organization member
 SETTA 15, 16, 17 PC member
 KSE 2012,13,14,15,16,17 PC member
 Tests & Proofs (TAP) 2017 PC member
 CyPhy 2017, 16, 15 PC member
 FM'16 doctoral symposium PC member
 iFMCloud'16 PC member
 SEFM 2015 PC member
 FM'15 Formal Methods 2015, Oslo, publicity chair
 SEFM'14 PC Member
 ATVA 2013 11th International Symposium on Automated Technology for Verification and Analysis, PC member
- ACM SAC-SVT'13 Track on Software Verification and Testing, PC member;
 ACM SAC-SVT'12, Track on Software Verification and Testing, PC member;
 FCT'11 18th International Symposium on Fundamentals of Computer Theory
 August 22-25, 2011, Oslo, Norway, Co-Chair and Program committee Chair
 Sumo'11 International Workshop on Scalable and Usable Model-Checking for Petri Nets and
 other Models of Concurrency. PC member
 TASE'11 PC member
 Fmoods/Forte'11 & DisCoTec'11 Program committee member and Poster chair
 Fmoods/Forte'10 IFIP International Conference on Formal Techniques for Distributed Systems,
 formed jointly from the two conference series FMOODS and FORTE, and part of
 the federated conference event DisCoTec (Distributed Computing Techniques)
- APNOC'10 International Workshop on Abstractions for Petri Nets and Other Models of Concur-
 rency, June 2010, Braga, Portugal, program committee member
 VAMP'09 2nd Workshop on Verification and Analysis of Multi-threaded Java-like Programs
 (ETAPS-satellite). York, United Kingdom, March 28, 2009. PC member
 Discotec'09 (Distributed Computing Techniques, Lisbon, Portugal, June 2009): publicity chair
 Fmoods/Forte'09 Program committee member
 APNOC'09 International Workshop on Abstractions for Petri Nets and Other Models of Concur-
 rency, June 2009, Paris, program committee member
 Discotec'08 (Distributed Computing Techniques, Oslo, June 2008): publicity chair and member
 of organizing committee
- Fmoods IFIP WG 6.1 International Conference on *Formal Methods for Object-Based Dis-*
tributed Systems: steering committee member since 2007, for 3 years
- Fmoods'08: program committee member
 - Fmoods'07: program committee member and publicity chair
 - Fmoods'06: program committee member and publicity chair
 - Fmoods'05: **program chair**
 - Fmoods'03: program committee member
- Tacas'06 12th International Conference on *Tools and Algorithms for the Construction and Anal-*
ysis of Systems: program committee member

Research (continued)

ICCP	International Conference on <i>Intelligent Computer Communication and Processing</i> , track <i>static analysis and verification</i> – ICCP'07: program committee member – ICCP'06: program committee member
Lego summer school	summer school “Programs & Proofs: Working in Type Theory”, 14. – 18. August 1995, Hetzelsdorf, Fränkische Schweiz, Germany. Organization committee member
Workshop	“2. Fränkische OOrientierungstage”, September 1993, Rothenbühl, Germany. Organization committee member
Workshop	“1. Fränkische OOrientierungstage”, October 1992, Erlangen, Germany. Organization committee member

Reviewing

Conferences	I have been acting as reviewer for (amongst others) the following <i>conferences</i> : SETTA'17, KSE'17, iFM'17, POPL'17, TAP'17, WADT'17, FM'16 Doctoral Symposium, NIK'16, SETTA'16, CyPhy, FM'16, KSE'16, iFM'16, ATPS'16, SETTA'15, ICTAC'15, KSE'15, ATVA'15, SEFM'15, ATPS'15, FASDS'14,15, SEFM'15, NIK'14, RP2014, TASE'14, SEFM'14, ATPS'14, TACAS'14, KSE'13, ATVA'13, Formats'12, CONCUR'12, KSE'12, ICTAC'11, FCT'11, TASE 11, 18th International Symposium on Fundamentals of Computer Theory, FACS'11, 20th European Symposium on Programming, ESOP 11, 38th ACM SIGACT-SIGPLAN Symposium on Principles of Programming Languages (POPL'11), 8th International Conference on integrated Formal Methods (iFM 2010), International Conference on Verification of Object-Oriented Software FoVeOOS'10, International Colloquium on Theoretical Aspects of Computing (ICTAC 2010), 2nd International Workshop on Abstractions for Petri Nets and Other Models of Concurrency (APNOC'10), 6th International Workshop on Formal Aspects of Component Software FACS 2009, Forte/Fmoods 2009, Fundamentals of Software Engineering FSEN'09, Fundamental Approaches to Software Engineering FASE'09, 7th International Conference on Integrated Formal Methods iFM'09, IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science, FSTTCS'08 28th IFIP WG6.1 International Conference on Formal Techniques for Networked and Distributed Systems Forte'08, 15th International Symposium on Formal Methods, FM'08, International Conference on Intelligent Computer Communication and Processing (ICCP '07, '06), Formal Aspects of Component Software (FACS'07), International Conference on Concurrency Theory (Concur '07, '01), IFIP International Conference on Formal Methods for Object-Based Distributed Systems (Fmoods '08, '07, '06, '05, '03), 13th International Workshop on Expressiveness in Concurrency (Express'06), International Conference on Functional Programming (ICFP), International Workshop on Verification, Model Checking and Abstract Interpretation (VMCAI'02), Foundations of object-oriented languages/Workshop on Object-Oriented Development (Fool/Woods'06), Tools and Algorithms for the Construction and Analysis of Systems (TACAS'06), Formats-FTRTFT 2004, FSEN'07, Principles of programming languages (POPL'05), ATVA'07, Formal Methods (FM'06), FTRTFT, Programming Concepts and Methods (Procomet'98), Foundations of Software Technology and Theoretical Computer Science FSTTCS' 97, Logic in Computer Science (LICS '08, '06, '05, '98, '99), Computer Aided Verification (CAV'04), European Conference on Object-Oriented Programming (ECOOP'99), FMCO'04, Formal Methods for Networked and Distributed Systems (Forte'07), International Colloquium on Automata, Languages and Programming (ICALP'05), Theoretical Aspects of Computer Science (STACS'97), Tools for System Design and Verification (Tools'02) ...
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Research (continued)

Journals In addition, I reviewed contributions to the following international journals (for some of the journals (esp. JLAP/JLAMP), I did several reviews): Formal Aspects of Computing, IEEE Transactions on Parallel and Distributed Systems, Transactions on Modularity and Composition (special issue of best papers from Modularity 2015), Software: Practice and Experience, Science of Computer Programming, Cambridge Journal of Mathematical Structures in Computer Science, Journal of Applied Logics (JAL), Annals of Mathematics and Artificial Intelligence (AMAI), Formal aspects of computing (FAC), Journal of Logic and Algebraic [Methods in] Programming (JLA[M]P), Information and Computation (IC), Software and Systems Modelling (SoSym), Theoretical Computer Science (TCS), International Journal on Software Tools for Technology Transfer (STTT)

Teaching & supervision

For a semester-by-semester listing of my involvement in teaching, see the added more detailed list. For titles and topics of the theses I supervised, see the bibliographic data at the end of this document.

lectures

models of concurrency	master/Ph.D level lecture (2015, 2014, 2013, 2008, 2007)
model checking	master/Ph.D level lecture (2017, 2015)
compiler construction	master-level lecture (2016, 2017)
static analysis	master-level/Ph.D level lecture (2006, 2008, 2010, 2012, 2014, 2016, 2017)
algorithms & data structures	undergraduate lecture with programming exercises (4 times in Germany, 2 times in Oslo)
theorem proving	graduate level lecture with exercises (2+2h)
theoretical foundations of oo languages supervision:	graduate level lecture with exercises (2+2h) I acted as copromotor resp. propotor in 3 the Ph.D theses defended at the University of Leiden (<i>E. Ábrahám</i> , <i>A. Grüner</i> , and <i>I. Grabe</i>). I was external examiner for the theses of <i>J. Klein</i> (University of Dresden), <i>R. Schlatte</i> (University of Graz). At UiO, I was supervising as main supervisor (“hovedveileder”) <i>A. Torjusen</i> , <i>T. M. T. Tran</i> , and <i>V. Pun</i> , and as co-supervisor for <i>H. Hansen</i> , and <i>S. L. Tapia Tarifa</i> . Currently, I am main supervisor of 2 PhD students (<i>D. Fava</i> , <i>B. Luteberget</i>) and co-supervisor of further two students (<i>J. B. Stumpf</i> , <i>S. Tokas</i>). In the autumn semester 2017, 3 new students have been offered a position as Ph.D students in this group and in whose supervision I will be involved. I was in the adjudication committee (internal examiner at UiO) for <i>M. Zohaib Iqbal</i> , <i>A. Moen Hagalisletto</i> , <i>X. Liang</i> . In Oslo I was involved (resp. are still involved) in the supervision of approximately 15 master theses. In Erlangen and in Kiel, I supervised in total 11 <i>diploma theses</i> and 3 “ <i>Studienarbeiten</i> ” (a pre-diploma thesis, with less scientific depth than the diploma thesis). The titles and topics of the theses can be found in the bibliographic references.
assistance:	in addition to the above lectures, which I designed and carried out on my own, I assisted also in the following lectures (mostly organizing and giving the exercises, but partly also lecturing): – operating systems (undergraduate level, 4 times) – distributed algorithms (graduate level) – software specification techniques for distributed systems Statemate/SDL – hybrid systems (graduate level)

lab courses & software project courses

embedded systems	programming Lego mindstorms robots with Esterel, a synchronous language with formal semantics (2 times)
Java programming	an introductory course at graduate level
software project	undergraduate level software project using Java
software engineering	an introductory course at undergraduate level course for engineers (2 times)
programming-in-	

Teaching & supervision (continued)

the-many seminars	an 8 hours graduate level software project of collaborative design and programming (8 hours per week, 5 times with varying topics)
	<ul style="list-style-type: none"> – model checking (2 times) – semantics and verification of object-oriented programs – hardware verification – compositional verification of distributed programs – component-based software engineering – distributed algorithms (4 times) – the Universal Modelling Language (UML) – distributed and concurrent programming – grid computing
misc	
open door	I gave presentations and demos for the general public on the occasions of the University's "open door days" in Kiel: 2003 and 2002 at the open door day of the Technical Faculty, 2000 at the open door day of the University Kiel. Besides that I gave presentations advertizing the academic subject of computer science for high school students a couple of times.
CS prep course	When the University Kiel established an introductory week-long preparatory course as service for beginners of computer science or of other subjects with computer interest, I was active in working out part of the programme and I presented my part at the beginning of each winter semester (4 times).
mentor	Mentor for young researchers (Ph.D and master's level) on matters of research and career at my old Alma Mater, the University of Erlangen-Nürnberg. The mentor programme is an initiative of the Technical Faculty with the Alumni federation of the university.
further duties	Apart from my more theoretical scientific inclinations, I was always involved in Erlangen as well as in Kiel and Oslo in (system-)administrative tasks. In Erlangen, I was responsible for installing and maintaining part the local software at the chair (L ^A T _E X, emacs, the gnu-software in general, and managing, with others, the wired ethernet LAN). That was at a time when such packages were not bundled and shipped with ready-made distributions and I was tasked with maintaining this software at a heterogeneous pool of Sun Workstations, HP-UX-systems and a few Silicon Graphic workstations. Similarly in Kiel, where, among other software, I helped maintaining Java, and also special-interest software like theorem provers, ML, ocaml, and similar software for the overall computer science department. Also I was responsible for the web-pages of the chair of Software Engineering in Kiel as well as for the PMA group in Oslo.

Miscellaneous

hobbies	sailing, guitar, gardening
languages	I am fluent in German, my mother tongue, and English. In addition, I speak—in varying degrees of imperfection— Norwegian, French, Spanish, and Italian. Concerning Norwegian, I passed the equivalent of the standardized, national language proficiency test (known as <i>Bergenstest</i>).

My publications are categorized mainly in (refereed) conference contributions and journal articles. Per category, the articles are roughly ordered chronologically, with the newest ones first. For completeness sake, I also added references to *technical reports* and *workshop contributions* (listed as “Others” towards the end). The workshop contributions are mostly unrefereed (or refereed in a very lightweight manner). Often they are early, or at least shorter versions of longer papers. Like many of my colleagues, I used especially the *Nordic Workshop of Programming Theory* (NWPT) as a platform where I in particular encouraged all our PhD students to submit and participate as a matter of good habit and to show presence in this kind of community (especially in the nordic countries). In quite some cases, we were invited to submit to corresponding special issues of the *Journal of Logic and Algebraic Methods in Programming* (JLAMP, formerly JLAP). Also, quite some papers are accompanied by a technical report (often with the same title as the submission but more material, such as missing proofs), which later then was the starting point for a journal version, and which explains the large number of technical reports. Therefore, some “material” is mentioned here in more than one incarnation (extended abstract, technical report, conference proceeding and —finally— journal version, and I included them all for completeness sake. For getting an impression, one can safely focus on the conference contributions and journal articles.

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