Curriculum Vitae

Dr.-Ing. Hubert Baumeister
Head of Section Software Engineering at DTU Informatics
Associate Professor
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Lyngby, 6.11.2008

Education

Dr.-Ing. **Universität des Saarlandes, Saarbrücken**
1999
Doctorate in May 1999, grade "sehr gut". Thesis: "Relations between Abstract Datatypes Modeled as Abstract Datatypes". Supervisor: Harald Ganzinger. Second reviewer: Jacques Loeckx.

Diploma **Universität Dortmund**
1984–1991
Studied computer science with physics as minor subject. Graduated as Diplom Informatiker with grade "sehr gut". Thesis: "About the Stability of Parameterized Specifications". Supervisor: Harald Ganzinger. Second reviewer: Herbert Weber.

Professional Experience

Informatics and Mathematical Modelling, DTU **Lyngby, Denmark**
since 2008
Head of section Software Engineering

since 2006
Associate professor in the section Software Engineering

Institut für Informatik, LMU **München, Germany**
1998–2006
Researcher at the "Institut für Informatik" with Martin Wirsing

Max-Planck-Institut für Informatik **Saarbrücken, Germany**
1991–1998
Researcher in the "Programming Logics" group with Harald Ganzinger

ParcPlace Systems **Palo Alto, USA**
Summer 1988
Work at ParcPlace Systems (spin-off of Xerox to market and develop Smalltalk); programming in Smalltalk and C

Georg Heeg Objektorientierte Systeme **Dortmund, Germany**
1987-1991
Software development in Smalltalk and presentation of Smalltalk-80 on fairs (CeBIT and Systems)

Universität Dortmund **Dortmund, Germany**
1986-1991
Student assistant with Harald Ganzinger; Among others, implementation of AC-unification in Prolog

RESEARCH

Object-Oriented Modeling and Extensions of UML

One line of research is the extension of UML to better model distributed computing [**?**, **?**], Web applications [**?**, **?**], and mobile systems [**?**, **?**, **?**, **?**].

This year we started to investigate extensions of UML to use UML for aspect-oriented modeling and applied these extensions to model access control and user adaptivity in Web applications [**?**, **?**].

Formal Methods

To better understand the formal underpinnings of components we have investigated UML class- and component diagrams in the context of formal specification of software components [**?**, **?**]. One outcome is the distinction between the glass-box and the black-box view of object systems [**?**] and a proposal for the semantics of OCL operation specifications [**?**]. This proposal was submitted as answer to the "request for issues" as part of the OCL standardization process.

I took part in the design of CASL, an algebraic specification language, and its formal semantics [**?**]. Together with Alexandre Zamulin I developed a state based extension of CASL (SB-CASL) which allows the specification of state-based systems similar to Z and Gurevich's ASMs [**?**] in the context of an order sorted algebraic framework.

In my dissertation, I developed a general framework for the integration of algebraic- and model-oriented specification approaches [**?**, **?**, **?**, **?**].

Previously, I did research on parameterized algebraic specifications [**?**, **?**]; in particular, I investigated the stability or parameterized specifications w.r.t. observational equivalence [**?**] and studied the relation between loose and initial semantics of parameterized algebraic specifications [**?**].

Application of Formal Methods in Agile Software Development

In the last years I have started to be interested in the integration of formal methods with agile software development methods [**?**]. The result, property driven development, mandates to develop the three views on a software system—tests, formal specification, and (executable) models—together [**?**].

As part CARUSO project we designed a framework for the development of customer specific applications in the CRM (Customer Relationship Management) domain [**?**, **?**] and applied Extreme Programming practices in this project [**?**, **?**].

PROJECTS

Taking part in the proposal writing and/or contract negotiations

- Aspects of Security for Citizens
  (2007—200)
  Funded by the Danish Strategic Research Council as part of ”Security for the Citizens” in cooperation with the LBT section
- SENSORIA (Software Engineering for Service-Oriented Overlay Computers)
  (2005—2009)
  EU–project with 18 partners.
- AGILE (Architectures for Mobility)
  (2002–2005)
  EU–project with 8 partners.
- CARUSO (Customer Care and Relationship Support Office)
  (2000–2002)
  EU-project with 4 partners. Project to develop a simple framework for implementing Customer Relationship Management applications.

Executive project management

- AGILE (also work package leader)
- CARUSO
- FORSOFT project A2
  (1998–2000)
  Subproject as part of the first research consortium for software (Forschungsverbund Software) funded by the Bavarian state. Goal of the subproject was the development of techniques to design distributed and hypermedia systems based on the UML. Executive management of the subproject.

Participation

- Aspects of Security for Citizens
- SENSORIA
- AGILE
- CARUSO
- FORSOFT project A2
- CoFI–WG (Common Framework Initiative–Working Group)
  (1998–2001)
  EU funded Working group for the design of the algebraic specification language CASL.
- WG COMPASS I + II
  (1989–1996)
  ESPRIT funded working group for the development of a algebraic foundation for the formal specification of systems and their components.

Program Chair XP2005, 6th International Conference on eXtreme Programming and Agile Processes in Software Engineering, University of Sheffield, UK, June 18–23, 2005.

Academic-Chair XP2004, 5th International Conference on eXtreme Programming and Agile Processes in Software Engineering, Garmisch-Partenkirchen, Germany, June 6–10, 2004.

WEB SITES

I maintain the Web site on CASL case studies (`http://www.ifi.lmu.de/~baumeist/CoFI`)

SOFTWARE

As part of the CARUSO project I have developed a dialog system to execute dialog scripts guiding call center agents in their dialog with the customer. The system was extended with forms by a student. The system is currently being used in the products of the company DataCall Solutions.

As part of the Forsoft A2 project I have implemented a software to demonstrate the techniques developed in this project to design Web applications.

I wrote a generator of Web-sites from structured text and an editor to write these structured texts.

At the Max-Planck-Institut für Informatik, I implemented a library system in Smalltalk and GemStone, an object-oriented database.

As a student I implemented AC-unification and AC-matching in Prolog and C as part of the CEC (Conditional Equations Completion) system of Harald Ganzinger [**?**] and implemented a language bridge between Smalltalk and Prolog to allow the calling of procedures from the other language.

Students of me have among others developed:

- A unified messaging system with routing based on fuzzy logic;
- A prototype for the display of real-time information about Formula 1 racing events on a WinCE client;
- A prototype for personalized information services;
- An accounting software for services in agent-based information systems;
- An Intranet for knowledge based communication for the company MEDIALAB; and
- A parser for CASL (Common Algebraic Specification Language).