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Curriculum Vitae

CLAUS BRABRAND

Full name: Claus Brabrand
Date of birth: May 20, 1973
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Current Position

Sep. 2007-present Associate Professor,
IT University of Copenhagen (aka. "ITU")

Research Interests

Programming languages: design, analysis, implementation.
Domain specific languages. Semantics. Program transformation.
Computing Education Research. Teaching/Learning.

Degrees

- January 1999 M.Sc. Computer Science (Cand. Scient., Datalogi), University of Aarhus, Denmark. Minor: Mathematics (Sidefag: Matematik)
- January 2003 Ph.D., BRICS International Ph.D. School, University of Aarhus, Denmark:
- Dissertation: *“Domain Specific Languages for Interactive Web Services”*
Supervisor: Michael I. Schwartzbach
Committee: Peter Thiemann, Henrik Reif Andersen, Mogens Nielsen

Grants

- Aug. 1999–Nov. 2002 Ph.D. scholarship,
BRICS & The Danish Research Foundation
- 2003–2004 Microsoft grant: *“Programmable .NET Services”* (with C. Consel)
20,000 euros.
- 2005–2006 It-vest grant: *“National Teaching Collaboration for Model-based Concurrency”*: 10,000 euros.

Professional Activities

Program Committee Member, *LDTA 2007*.
Program Committee Member, *LDTA 2008*.
Program Co-Chair, *LDTA 2010*.

Jury member of *“The Golden Ratio 2008”* Educational Film Festival, *DGS 2008*.

Invited Speaker, *TeaConc 2007*.
Keynote Speaker, *DMLF’07 - Datamatikerlærerforeningens Årsmøde 2007*.
Keynote Speaker, *Koli Calling 2007*.
Keynote Speaker, *ITiCSE 2009*.

Chair of The Science Faculty’s Special Educational Task Force (Spring 2007):
Charing the implementation of the new 7-step grade scale at Faculty-level, involving total revision of approximately 500 course descriptions so as to also ensure that all courses have explicit *intended learning outcomes* (cf. my award-winning short-film).

Stays Abroad

- Aug. 1995–Jun. 1996 Studied one year (Computer Science) at Université Louis Pasteur, Strasbourg, France (with ERASMUS student exchange program)
- Jun. 2001–Aug. 2001 Summer internship at IBM T. J. Watson Research Center, Hawthorne, New York
- Jan. 2003–Jan. 2004 Initially Post Doc.; then permanent Associate Researcher (CR2) INRIA, Bordeaux, France

Working Experience

May–Aug. 1997	CGI Programmer at Tele Danmark Internet, Aarhus, Denmark
Feb.–Aug. 1999	Research Assistant at BRICS/DAIMI, University of Aarhus, Denmark
Jun.–Aug. 2001	Summer internship at IBM T. J. Watson Research Center, Hawthorne, New York
Jan. 2003–Jan. 2004	Post Doc., then CR2, INRIA, Bordeaux, France
Jan. 2004–Aug. 2007	Assistant Professor, BRICS/DAIMI, University of Aarhus, Denmark

Invited Presentations

December 7, 1999	Datalogforeningen, Aarhus, Denmark: “<bigwig>, A Language for Developing Interactive Web Services”
January 18, 2000	Datalogforeningen, Copenhagen, Denmark: “<bigwig>, A Language for Developing Interactive Web Services”
March 20, 2000	Microsoft Research, Redmond, WA: “<bigwig>, A Language for Developing Interactive Web Services”. Audio/video recording available at http://www.brics.dk/~brabrand/ (72min)
July 13, 2001	IBM T. J. Watson Research Center, Hawthorne, New York: “Flexible, Safe, and Efficient Dynamic Generation of HTML”. Audio/video recording available at http://www.brics.dk/~brabrand/ (62min)
August 22, 2001	University of Pennsylvania, Philadelphia, PA: “Flexible, Safe, and Efficient Dynamic Generation of HTML”
November 22, 2002	IT University of Copenhagen, Copenhagen, Denmark: “Macro Languages and Metamorphic Syntax Macros”
November 28, 2002	LaBRI / INRIA, Bordeaux, France: “Flexible, Safe, and Efficient Dynamic Generation of XML”
September 22, 2003	Generative Programming and Component Engineering Tutorial (GPCE’03), Erfurt, Germany: “Domain Specific Languages for Interactive Web Services”
November 28, 2003	CorSS Meeting, ENSEIRB, Bordeaux, France: “Call/C: A Domain-Specific Language for Robust Internet Telephony Services”
November 5, 2004	π - λ Seminar, BRICS, University of Aarhus, Denmark: “Approximating Context-Free Grammar Ambiguity”
November 29, 2004	π - λ Seminar, BRICS, University of Aarhus, Denmark: “xsugar: Reversible Stylesheets”
March 17, 2005	COPLAS Seminar, IT University of Copenhagen, Denmark: “xsugar: Reversible Stylesheets”
April 13, 2005	CISS, University of Aalborg, Denmark: “xsugar: Reversible Stylesheets”
July 15, 2005	University of Tokyo, Japan: “xsugar: Dual Syntax for XML Languages”
October 25, 2005	BRICS/FIRST Ph.D. Schools’ Annual Retreat, Sandbjerg, Denmark: “Introduction to University Didactics: what students do when we teach”
November 4, 2005	Special Teaching Seminar, DAIMI, Denmark: “Introduction to University Didactics (University Studies in Education)”
November 25, 2005	Special Teaching Seminar (Repeat), DAIMI, Denmark: “Introduction to University Didactics (University Studies in Education)”
February 25, 2006	OOSS Retreat, Molslaboratoriet, Denmark: “Introduction to University Didactics (University Studies in Education)”
April 5, 2006	Technische Fakultät, University of Bielefeld, Germany

August 24, 2006	<i>"Analyzing Ambiguity of Context-Free Grammars"</i> 3 day Seminar on Teaching and Learning, Sandbjerg, Denmark
December 19, 2006	<i>"The Theory of Didactic Situations"</i> Aalborg University, Denmark
January 24, 2007	<i>"Analyzing Ambiguity of Context-Free Grammars"</i> Faculty of Science, Aarhus University, Denmark
January 30, 2007	<i>"How to implement the new grading scale at The Faculty of Science"</i> (2 hours, for all teachers at the Faculty of Science, U. of Aarhus) Copenhagen Business School, Denmark
February 21, 2007	<i>"Teaching Teaching & Understanding Understanding"</i> Faculty of Science, University of Southern Denmark
June 07, 2007	<i>"Implementation af den nye karakterskala"</i> Video Roadshop, University of Aarhus
May 14, 2007	<i>"On the Use of Video and Humour in Teaching"</i> Seminar on Alignment, Institute of Information and Media Studies
April 11, 2007	<i>"Teaching Teaching & Understanding Understanding"</i> Seminar on Alignment, Engineering College of Aarhus
June 25, 2007	<i>"Teaching Teaching & Understanding Understanding"</i> Int'l Workshop on Teaching Concurrency (TeaConc'07), Siedlce, Poland: <i>"Constructive Alignment for Teaching Model-based Design for Concurrency"</i>
July 09, 2007	IT University of Copenhagen (ITU), Denmark <i>"Analyzing Ambiguity of Context-Free Grammars"</i>
September 20, 2007	Keynote for DMLF'07, Vejle, Denmark <i>"Constructive Alignment"</i>
November 16, 2007	Keynote for Koli Calling'07, Koli National Park, Finland <i>"Constructive Alignment for Teaching Computer Science"</i>
April 28, 2007	FIRST Ph.D. School Retreat, Birkerød, Denmark <i>"Personality Types for Working in Groups"</i>
April 29, 2007	FIRST Ph.D. School Retreat, Birkerød, Denmark <i>"Getting Students to Work ...on Projects ...in Groups"</i>
May 28, 2008	One-day seminar for entire ITU teaching staff, IT University of Copenhagen, Denmark <i>"Seminar on Teaching & Learning"</i>
October 31, 2008	One-day seminar for entire ITU teaching staff, IT University of Copenhagen, Denmark <i>"Seminar on Teaching & Learning"</i>
April 2, 2009	COPLAS Seminar, DIKU (South), Copenhagen Uni., Denmark <i>"Banana Algebra: Syntactic Language Extension via an Algebra of Languages and Transformations"</i>

Conference Presentations

May 12, 1999	The Eighth International World Wide Web Conference (WWW8), Toronto, Ontario: <i>"A Runtime System for Interactive Web Services"</i>
June 18, 2001	Workshop on Program Analysis for Software Tools and Engineering (PASTE'01), Snowbird, Utah: <i>"Static Validation of Dynamically Generated HTML"</i>
January 14, 2002	Workshop on Partial Evaluation and Semantics-Based Program Manipulation (PEPM'02), Portland, Oregon: <i>"Growing Languages with Metamorphic Syntax Macros"</i>

April 6, 2003	Workshop on Language Descriptions, Tools and Applications (LDTA'03), Warsaw, Poland: <i>"The metafront System: Extensible Parsing and Transformation"</i>
August 28, 2005	Symposium on Database Programming Languages (DBPL'05), Trondheim, Norway: <i>"Dual Syntax for XML Languages"</i>
June 25, 2007	Int'l Workshop on Teaching Concurrency (TeaConc'07), Siedlce, Poland: <i>"Constructive Alignment for Teaching Model-based Design for Concurrency"</i>
July 18, 2007	Conference on Implementation and Application of Automata (CIAA'07), Prague, Czech Republic: <i>"Analyzing Ambiguity of Context-Free Grammars"</i>
November 16, 2007	Keynote for Koli Calling'07, Koli National Park, Finland <i>"Constructive Alignment for Teaching Computer Science"</i>

Awards

Short-film: "Teaching Teaching & Understanding Understanding" I have written, directed, produced, and co-edited the short-film about teaching (particularly about "Constructive Alignment"); *"Teaching Teaching & Understanding Understanding"*.

It was awarded the "Det gyldne snit" ("The Golden Ratio") 2006 for best educational video by "Forskningsnettet" ("The Danish Research Network") in the "Linear Productions" category. Here is the statement from the jury (which consists of people ranging from cinematographic experts to experts in teaching/learning):

The production conveys substantial insights from the area of didactics (university studies in education). It is a basis for a discussion about three perspectives on higher education; the students' activities, the teachers' activities, and the subject matter to be taught and learned. It is intended for teachers and students at higher educational institutions. It is an exemplary basis for reflection with good identificational opportunities for the target audience.

In about twenty minutes it manages to convey a complicated message in a very well-structured and thought-provoking way.

One of the mechanisms used is humour; another, images and graphics. It is not just a double portrayal, where images and speak elicit the same information in two different ways. On the contrary, sound, image, and graphic elements are brought together elegantly forming one united expression.

It features an Epilogue written by Professor John Biggs. Subtitles in English, French, Spanish, Italian, Portuguese, German, and Danish. Language: English. Video: "4:3", PAL, Stereo. Duration: 19 mins. (C)opyright 2006, University of Aarhus.

Since its release on DVD (Dec. 22, 2006), the film has sold 4,000+ copies, been seen online 50,000–100,000 times, and is being used extensively for educational development, world-wide. In April 2007, it was distributed along with the Danish National Journal on University Pedagogy ("Dansk Pædagogisk Tidsskrift").

Teaching Experience

May 2002	Macro Languages (2-wk seminar), University of Aarhus
Spring 2004	Concurrency (1 semester), University of Aarhus
Fall 2004	Web Technology (1 quarter), University of Aarhus
Fall 2004	Concurrency (1 quarter), University of Aarhus

Spring 2005 Concurrency (1 quarter), University of Aarhus
 Spring 2005 Macro Seminar (1 quarter), University of Aarhus
 Fall 2005 Semantics (1 quarter), University of Aarhus
 Spring 2006 Concurrency (1 quarter), University of Aarhus
 Summer 2006 University Studies in Education (3 days), University of Aarhus
 Spring 2006 Programming Languages (1 quarter), University of Aarhus
 Fall 2006 Semantics (1 quarter), University of Aarhus
 Fall 2006 Programming Paradigms (1 quarter), University of Aalborg
 Spring 2007 Concurrency (1 quarter), University of Aarhus
 Fall 2007 Programming Paradigms (2 weeks), University of Aalborg
 Fall 2007 Project and Communication (1 semester), IT University of Copenhagen
 Spring 2008 First-Year Projects (1 semester), IT University of Copenhagen
 Spring 2008 Advanced Models and Programs (2*2 weeks), IT University of Copenhagen
 Spring 2008 Seminar on Teaching & Learning (whole day), IT University of Copenhagen
 Fall 2008 Seminar on Teaching & Learning (whole day), IT University of Copenhagen
 Fall 2008 Programming Paradigms (2 weeks), University of Aalborg
 Fall 2008 Project and Communication (1 semester), IT University of Copenhagen
 Spring 2009 First-Year Projects (1 semester), IT University of Copenhagen
 Spring 2009 Advanced Models and Programs (2*2 weeks), IT University of Copenhagen

Theses Advised

2002–2003 Co-supervised Mads Vanggaard
 M.Sc., University of Aarhus, Denmark
 Spring 2003 Co-supervised Nicolas Salatge
 DEA, Université Bordeaux I, France
 Spring 2003 Co-supervised Fabien Latry
 License, Ecole Normale Supérieure (ENSEIRB), Bordeaux, France

Theses

- [1] "Synthesizing Safety Controllers for Interactive Web Services", Master's thesis, December 1998.
- [2] "Domain Specific Languages for Interactive Web Services", Ph.D. dissertation, November 2002.

Invited Papers

- [3] "Constructive Alignment for Teaching Model-Based Design for Concurrency", Proc. of 2nd Workshop on Teaching Concurrency, Siedlce, Poland, 2007.
- [4] "Constructive Alignment and The SOLO Taxonomy: A Comparative Study of University Competences in Computer Science vs. Mathematics", Proc. of 7th Koli Calling Computing Education Research Conference, Koli National Park, Finland, 2007.

Refereed Journal Publications

- [5] "A Runtime System for Interactive Web Services", with Anders Møller, Anders Sandholm, and Michael I. Schwartzbach, Special issue of *Computer Networks* Vol. 31 No. 11–16: 1391-1401, Elsevier, 1999.
- [6] "PowerForms: Declarative Client-Side Form Field Validation", with Anders Møller, Mikkel Ricky, and Michael I. Schwartzbach, in *World Wide Web Journal*, Vol. 3, No. 4: 205-214, Baltzer Science Publishers, 2000.
- [7] "The <bigwig> Project", with Anders Møller and Michael I. Schwartzbach, in *Transactions on Internet Technology*, Vol. 2, No. 2, ACM, May 2002.
- [8] "Language-Based Caching of Dynamically Generated HTML", with Anders Møller, Steffan Olesen, and Michael I. Schwartzbach, in *World Wide Web Journal*, Vol. 5, No. 4: 305–323, Kluwer Academic Publishers, 2002.
- [9] "The Metafront System; Safe and Extensible Parsing and Transformation", with Michael I. Schwartzbach, *Science of Computer Programming*, Vol. 68, No. 1, Elsevier, 2007.
- [10] "Dual Syntax for XML Languages", with Anders Møller and Michael I. Schwartzbach, *Information Systems*, Vol. 33, No. 4, Elsevier, 2007.
- [11] "Constructive Alignment for Teaching Model-Based Design for Concurrency", *Transactions on Petri Nets and Other Models of Concurrency (ToPNoC)*, Vol. 1, No. 1, Springer-Verlag, 2008.
- [12] "Using the SOLO Taxonomy to Analyze Competence Progression of University Science Curricula", *Higher Education*, Springer-Verlag, Vol. 58, No. 4, Springer, 2009.

Refereed Conference and Workshop Publications

- [13] "A Runtime System for Interactive Web Services", with Anders Møller, Anders Sandholm, and Michael I. Schwartzbach, *WWW8, Proc. 8th International World Wide Web Conference*, Elsevier, 1999.
- [14] "Static Validation of Dynamically Generated HTML", with Anders Møller and Michael I. Schwartzbach, in *PASTE'01, Proc. Workshop on Program Analysis for Software Tools and Engineering*, ACM, 2001.
- [15] "Growing Languages with Metamorphic Syntax Macros", with Michael I. Schwartzbach, in *PEPM'02, Proc. Workshop on Partial Evaluation and Semantics-Based Program Manipulation*, ACM, 2002.
- [16] "The metafront System: Extensible Parsing and Transformation", with Michael I. Schwartzbach and Mads Vanggaard, in *LDTA'03, Third Workshop on Language Descriptions, Tools and Applications*, ACM, 2003.
- [17] "Dual Syntax for XML Languages", with Anders Møller and Michael I. Schwartzbach, in *DBPL'05, Proc. Symposium on Database Programming Languages*, ACM, 2005.
- [18] "Analyzing Ambiguity of Context-Free Grammars", with Anders Møller and Michael I. Schwartzbach, in *CIAA'07, Proc. 12th International Conference on Implementation and Application of Automata*, ACM, 2007.

H-number

My H-number is 9 (according to Google Scholar) which means that I have (at least) 9 publications each with (at least) 9 citations:

- (01,94) "The <bigwig> Project", 2002 (94 citations)
- (02,45) "Static Validation of Dynamically Generated HTML", 2001 (45 citations)
- (03,39) "Growing Languages with Metamorphic Syntax Macros", 2002 (39 citations)
- (04,33) "PowerForms: Declarative Client-side Form Field Validation", 2000 (33 citations)
- (05,24) "Dual Syntax for XML Languages", 2005 (24 citations)
- (06,22) "A Runtime System for Interactive Web Services", 1999 (22 citations)
- (07,21) "The metafront System: Ext. Parsing and Transformation", 2003 (21 citations)
- (08,15) "Analyzing Ambiguity of Context-Free Grammars", 2006 (15 citations)
- (09,14) "Language-Based Caching of Dynamically Generated HTML", 2002 (14 citations)

Extra-Curricular Activities

Apr. 2004–Aug. 2007	Instructor at the Fitness Center for University Employees, University of Aarhus, Denmark
Jun. 2004–Apr. 2006	Volunteer at the International Student Center, University of Aarhus, Denmark
Aug. 2004–Dec. 2004	Studying linguistics, Department of Linguistics, University of Aarhus, Denmark
Oct. 2004–Nov. 2006	Organizer of the BRICS π - λ Seminars (regular meetings of the Programming Languages and Formal Models group) at BRICS, University of Aarhus, Denmark
Jan. 2005–Apr. 2006	Board member of the International Student Center, University of Aarhus, Denmark
Jun. 2005–Aug. 2007	Board member of the Fitness Center for University Employees, Aarhus, Denmark

Languages

- Danish (native)
- English (fluent)
- French (fluent)
- Italian (intermediate)
- Portuguese (intermediate)
- Spanish (intermediate)
- German (conversation level)
- Norwegian (passive: understood/read)
- Swedish (passive: understood/read)

- Japanese (basics)
- Wolof (basics)