

(((Claus Brabrand)))

PERSONAL INFO

Full name:	Claus Brabrand
Date of birth:	May 20, 1973
Nationality:	Danish
Family:	Married, 3 children (aged 12, 5, and almost 2).

ADDRESS

Work:	IT University of Copenhagen Dept. of Computer Science Rued Langgaards Vej 7 DK-2300 Copenhagen S; Denmark
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Phone (work):	(+45) 72 18 50 76
Email:	brabrand (at) itu (dot) dk
Homepage:	http://www.itu.dk/people/brabrand/

EDUCATION

Ph.D. (Jan. 24, 2003):	(Computer Science) BRICS Int'l Ph.D. School, Aarhus University, Denmark
M.Sc. (Jan. 28, 1999):	(Computer Science) Aarhus University, Denmark

POSITIONS

Sep. 2007 - ... (10 years):	Current position: Associate Professor IT University of Copenhagen, Denmark (Six months of paternity leave: 2013 & 2016)
2004 - 2007 (3½ years):	Assistant Professor BRICS/DAIMI, Aarhus University, Denmark
2003 - 2004 (1 year):	Post Doc; then CR2 full-time Researcher INRIA Research Center, Bordeaux, France
June-Aug 2001 (3 months):	Cooperative Researcher IBM T. J. Watson Research Center Hawthorne, New York, USA
Feb-Aug 1999 (6 months):	Research Assistant BRICS/DAIMI, Aarhus University, Denmark
May-Aug 1997 (4 months):	CGI Programmer, Tele Danmark Internet, Aarhus, Denmark

MANAGEMENT EXPERIENCE

2017 -:	Head of research group: “Software Quality Research (SQUARE)”
2012 - 2013:	Head of Globalization Group, ITU.
2012 - 2017:	Supervision of Ph.D. Students

RESEARCH INTERESTS

<ul style="list-style-type: none"> • Static program analysis • Programming languages (design, analysis, & implementation) • Variability and highly-configurable systems • Domain-specific languages • Educational research

RESEARCH STATEMENT

My research is centered on how to improve software development and developers via automated tool support; especially how program analysis can help programmers by automatically intercepting errors in programs before they run. I have experience with static program analysis in various contexts; including: variability and highly-configurable systems, domain-specific languages, web services, general-purpose programming, and syntactic specifications (analyzing context-free grammars and regular expressions).

PH.D. STUDENTS & POST DOCS

Finished 2017: (Post Doc.)	Aleksander Dimovski co-advised with Andrzej Wasowski. IT University of Copenhagen. Developed foundation for variability analyses.
Finished 2017: (Ph.D.)	Jean Melo co-advised with Andrzej Wasowski. IT University of Copenhagen, Denmark. Studied bugs in highly-configurable systems.
Finished 2017: (Ph.D.)	Iago Abal, co-advised with Andrzej Wasowski. IT University of Copenhagen, Denmark. Developed EBA for finding errors in Linux.
Finished 2013: (Ph.D.)	Jakob Grauenkjær Thomsen, co-advised with Erik Ernst, Aarhus University, Denmark. Developed code now running in Google Maps.
Finished 2012: (Ph.D.)	Márcio Ribeiro, co-advised with Paulo Borba, Universidade Federal de Pernambuco, Brazil. Won “Best Dissertation in all of Brazil 2012”.

AWARDS

Oct 23, 2014	German IT-Security Award (runner up) for SPL ^{LIFT} . 60,000 EUR with Eric Bodden, Mira Mezini, Paulo Borba, Márcio Ribeiro, and Tárzis Tolêdo.
July 25, 2013	My Ph.D. student, Márcio Ribeiro, won “Best Dissertation in all of Brazil 2012” in Computer Science at CTD at CSBC 2013.
Sep. 30, 2011	Best Tool Award at CBSOFT 2011 for tool: “A Tool for Improving Maintainability of Preprocessor-based Product Lines”.
Nov. 13, 2006	Awarded “The Golden Ratio 2006” award for my 19’ short-film entitled: “Teaching Teaching & Understanding Understanding”.

SCIENCE METRICS

H-Index:	19 (according to Google Scholar)
# Citations:	1,256 (according to Google Scholar)
# Publications:	43 (according to DBLP) NB: does not count educational publications.
Breakdown:	4 (books), 3 (keynote/invited publications) 16 (journal publications), and 24 (conference/workshop publications).

LANGUAGES

Fluent:	Danish, English, Portuguese, and French
Intermediate:	Italian, Spanish, and Swedish
Basic conversation:	German

KEYNOTE PUBLICATIONS

Claus Brabrand & Bettina Dahl: “Analyzing CS Competencies using The SOLO Taxonomy”, keynote abstract for Keynote talk at ITiCSE’09, Paris, France (July 6, 2009).

Claus Brabrand & Bettina Dahl: “Constructive Alignment and The SOLO Taxonomy: A Comparative Study of University Competencies in Computer Science vs. Mathematics”, keynote paper for keynote talk at Koli’07, Koli National Park, Finland, (Nov. 16, 2007). Also in *Conferences in Research and Practice in Information Technology*, Vol. 88, 2008.

Claus Brabrand: “Constructive Alignment for Teaching Model-Based Design for Concurrency”, invited paper for invited talk at TeaConc’07, Siedlce, Poland (June 25, 2007). Also in *Transactions on Petri Nets and Other Models of Concurrency (ToPNoC)*, Vol. 1(1), Springer-Verlag, 2008.

REFEREED JOURNAL PUBLICATIONS

Iago Abal, Jean Melo, Stefan Stanculescu, **Claus Brabrand**, Márcio Ribeiro, Andrzej Wasowski: “Variability Bugs in Highly-Configurable Systems: A Qualitative Analysis”, *Software Engineering and Methodology (TOSEM)*, ACM, To appear.

Alexandru F. Iosif-Lazar, Jean Melo, Aleksandar S. Dimovski, **Claus Brabrand**, Andrzej Wasowski: “Effective Analysis of C Programs by Rewriting Variability”, *The Art, Science, and Engineering of Programming*, Vol. 1(1), 2017.

Aleksandar S. Dimovski, Ahmad Salim Al-Sibahi, **Claus Brabrand**, Andrzej Wasowski: “Efficient family-based model checking via variability abstractions”, *Software Tools for Technology Transfer (STTT)*, Vol. 19(5), Springer, 2017.

Jan Midtgaard, Aleksandar S. Dimovski, **Claus Brabrand**, Andrzej Wasowski: “Systematic Derivation of Correct Variability-Aware Program Analyses”, *Science of Computer Programming*, To Appear, Elsevier, 2015.

Jacob Andersen, **Claus Brabrand**, David R. Christensen: “Banana Algebra: Compositional Syntactic Language Extension”, *Science of Computer Programming*, Vol. 78(10), Elsevier, 2013.

Claus Brabrand, Márcio Ribeiro, Társis Tolêdo, Johnny Winter, Paulo Borba: “Intraprocedural Dataflow Analysis for Software Product Lines”, *Transactions on Aspect-Oriented Software Development*, Vol. 10, Springer, 2013.

Claus Brabrand, Robert Giegerich, Anders Møller: “Analyzing Ambiguity of Context-Free Grammars”, *Science of Computer Programming (SCP)*, Vol. 75(3), Elsevier, 2010.

Claus Brabrand & Bettina Dahl: “Using the SOLO Taxonomy to Analyze Competence Progression of University Science Curricula”, *Higher Education*, Vol. 58(4), Springer 2009.

Claus Brabrand: “Constructive Alignment for Teaching Model-Based Design for Concurrency”, *Transactions on Petri-Nets and Other Models of Concurrency (ToPNoC)*, Vol. 1(1), Springer, ‘08.

Claus Brabrand, Anders Møller, & Michael Schwartzbach: “Dual Syntax for XML Languages”, *Information Systems*, Vol. 33(4), Elsevier, 2008.

Claus Brabrand & Michael Schwartzbach: “The Metafront System: Extensible Parsing and Transformation”, *Science of Computer Programming (SCP)*, Vol.68(1), Elsevier, 2007.

Claus Brabrand, Anders Møller, Steffan Olesen, & Michael Schwartzbach: “Language-Based Caching of Dynamically Generated HTML”, *WWW Journal*, Vol. 5(4), Springer, 2002.

Claus Brabrand, Anders Møller, & Michael Schwartzbach: “The <bigwig> Project”, *ACM Transactions on Internet Technology (TOIT)*, Vol. 2(2), ACM, 2002.

Claus Brabrand, Anders Møller, Mikkel Ricky, & Michael Schwartzbach, “Powerforms: Declarative Client-Side Form Field Validation”, *WWW Journal*, Vol. 3(4), Kluwer, 2000.

Claus Brabrand, Anders Møller, Anders Sandholm, & Michael Schwartzbach: “A Runtime System for Interactive Web Services”, *Journal of Computer Networks*, Vol. 31(11-16), 1999.

REFEREED CONFERENCE/WORKSHOP PUBLICATIONS

Jean Melo, Fabricio Batista Narcizo, Dan Witzner Hansen, **Claus Brabrand**, Andrzej Wasowski: “Variability through the Eyes of the Programmer”, *ICPC 2017*, Buenos Aires, Argentina, 2017.

Iago Abal, **Claus Brabrand**, Andrzej Wasowski: “Effective Bug Finding in C Programs with Shape and Effect Abstractions”, *VMCAI 2017*, Paris, France, 2017.

Aleksandar S. Dimovski, **Claus Brabrand**, & Andrzej Wasowski: “Finding Suitable Variability Abstractions for Family-Based Analysis.”, *FM 2016*, Limassol, Cyprus, 2016.

Jean Melo, **Claus Brabrand**, & Andrzej Wasowski: “How does the Degree of Variability affect Bug Finding?”, *ICSE 2016*, Austin, TX, USA, 2016.

Jean Melo, Elvis Flesborg, **Claus Brabrand**, & Andrzej Wasowski: “A Quantitative Analysis of Variability Warnings in Linux”, *VAMOS 2016*, Salvador, Brazil, 2016.

Aleksandar S. Dimovski, Ahmad Salim Al-Sibahi, **Claus Brabrand**, & Andrzej Wasowski: “Family-Based Model Checking Without a Family-Based Model Checker”, *SPIN 2015*, Stellenbosch, South Africa, 2015.

Aleksandar S. Dimovski, Ahmad Salim Al-Sibahi, **Claus Brabrand**, & Andrzej Wasowski: “Family-based model checking using off-the-shelf model checkers”, *SPLC 2015*, Nashville, TN, USA, 2015.

Aleksandar S. Dimovski, **Claus Brabrand**, & Andrzej Wasowski: “Variability Abstractions: Trading Precision for Speed in Family-Based Analyses”, *ECOOP 2015*, Prague, Czech Republic, 2015.

Iago Abal, **Claus Brabrand**, & Andrzej Wasowski: “42 Variability Bugs in the Linux Kernel: A Qualitative Study”, In Proc. 29th IEEE/ACM International Conference on Automated Software Engineering (ASE), Västerås, Sweden 2014.

Jan Midtgaard, **Claus Brabrand**, & Andrzej Wasowski: “Systematic Derivation of Static Analyses for Software Product Lines”, In Proc. 13th Int’l Conference on MODULARITY 2014, p. 181-192, Lugano, Switzerland, 2014.

Eric Bodden, Tarsis Toledo, Marcio Ribeiro, **Claus Brabrand**, Paulo Borba, Mira Mezini: “SPL-LIFT: Statically Analyzing Software Product Lines in Minutes Instead of Years”, 34th ACM Conference on Programming Language Design and Implementation (PLDI’13), p. 355-364, Seattle, WA, USA 2013.

Jakob G. Thomsen, Erik Ernst, **Claus Brabrand**, & Michael Schwartzbach: “WebSelf: A Web Scraping Framework”, In Proc. Int’l Conference on Web Engineering 2012 (ICWE 2012), p. 347-361, Berlin, Germany, 2012.

Márcio Ribeiro, Társis Tolêdo, Johnni Winther, **Claus Brabrand**, & Paulo Borba: “Emergo: A Tool for Improving Maintainability of Preprocessor-based Product Lines”, In Proc. AOSD 2012 Demos (AOSD Demos 2012), Potsdam, Germany, 2012.

Claus Brabrand, Márcio Ribeiro, Társis Tolêdo, & Paulo Borba: “Intraprocedural Dataflow Analysis for Software Product Lines”, In Proc. MODULARITY: AOSD 2012, p. 13-24, Potsdam, Germany, 2012.

Márcio Ribeiro, Felipe Queiroz, Paulo Borba, Társis Tolêdo, **Claus Brabrand**, & Sérgio Soares: “On the Impact of Feature Dependencies when Maintaining Preprocessor-based Software Product Lines”, In Proc. Generative Programming and Component Engineering (GPCE 2011), p. 23-32, Portland, OR, USA, 2011.

Márcio Ribeiro, Társis Tolêdo, Paulo Borba, & **Claus Brabrand**: “A Tool for Improving Maintainability of Preprocessor-based Product Lines”, In Proc. Second Brazilian Conference on Software: Theory and Practice (CBSOFT) 2011. Tool Session, São Paulo, Brazil, 2011.

Claus Brabrand & Jakob G. Thomsen: “Typed and Unambiguous Pattern Matching on Strings using Regular Expressions”, In Proc. 12th Int’l ACM SIGPLAN Symposium on Principles and Practice of Declarative Programming (PPDP), p. 243-254, Hagenberg, Austria, 2010.

Jacob Andersen & **Claus Brabrand**: “Syntactic Language Extension via an Algebra of Languages and Transformations”, In Proc. 9th Workshop on Language Descriptions, Tools, and Applications (LDTA), p. 67-85, York, England, March 28, 2009.

Claus Brabrand, Robert Giegerich, & Anders Møller: “Analyzing Ambiguity of Context-Free Grammars”, in Proc. Int’l Conference on Implementation and Application of Automata (CIAA), p. 214-225, LNCS 4783, Springer, Prague, Czech Rep., July 18, 2007.

Claus Brabrand, Anders Møller, & Michael Schwartzbach: “Dual Syntax for XML Languages”, In Proc. 10th Int’l Symposium on Database Programming Languages (DBPL), p.27-41, LNCS 3774, Springer, Trondheim, Norway, 2005.

Claus Brabrand, Michael Schwartzbach, & Mads Vanggaard: “The metafront System: Extensible Parsing and Transformation”, In Proc. 3rd Workshop on Language Descriptions, Tools, and Applications (LDTA), p. 67-85, Warzaw, Poland, April 6, 2003.

Claus Brabrand & Michael Schwartzbach: “Growing Languages with Metamorphic Syntax Macros”, In Proc. ACM SIGPLAN Workshop on Partial Evaluation and Semantics-Based Program Manipulation (PEPM), p. 31-40, ACM, Portland, OR, USA, January 14, 2002.

Claus Brabrand, Anders Møller, & Michael Schwartzbach: “Static Validation of Dynamically Generated HTML”, In Proc. ACM SIGPLAN-SIGSOFT Workshop on Program Analysis for Software Tools and Engineering (PASTE), p. 38-45, ACM, Snowbird, UT, USA, June 18, 2001.

Claus Brabrand, Anders Møller, Anders Sandholm, & Michael Schwartzbach: “A Runtime System for Interactive Web Services”, In Proc. 8th Int’l World Wide Web Conference (WWW), p. 313-323, Elsevier, Toronto, Canada, May 12, 1999.

BOOKS

Marcio Ribeiro, Paulo Borba, **Claus Brabrand**: “Emergent Interfaces for Feature Modularization”, Springer, 2014.

Claus Brabrand & Eric Van Wyk (Eds.): Science of Computer Programming, Vol. 87 (Special Section on LDTA 2011), ACM Digital Library, 2014.

Claus Brabrand & Eric Van Wyk (Eds.): “Proceedings of the Eleventh Workshop on Language Descriptions, Tools, and Applications”, ACM Digital Library, 2011.

Claus Brabrand & Pierre-Etienne Moreau (Eds.): “Proceedings of the Tenth Workshop on Language Descriptions, Tools, and Applications”, ACM Digital Library, 2010.

STAYS ABROAD

Jun-Aug 2017 (3 months):	Visiting Professor, Universidade Federal de Pernambuco (UFPE), Recife, PE, Brazil
Jun-Dec 2010 (6 months):	Visiting Professor, Universidade Federal de Pernambuco (UFPE), Recife, PE, Brazil
2003 – 2004 (1 year):	Post Doc; then CR2 Full-time Researcher INRIA Research Center, Bordeaux, France
June-Aug 2001 (3 months):	Summer Coop Researcher IBM T.J.Watson Research Center Hawthorne, New York, USA
1995 – 1996 (1 year):	ERASMUS Exchange Student (Computer Science) Université Louis Pasteur, Strasbourg, France

THESES

Nov. 7, 2002 (Ph.D.):	Claus Brabrand: “Domain Specific Languages for Interactive Web Services”, Ph.D. Dissertation, Aarhus University, Denmark
Dec. 20, 1998 (M.Sc.):	Claus Brabrand: “Synthesizing Safety Controllers for Interactive Web Services”, Master’s Thesis, Aarhus University, Denmark

SHORT-FILM

Short-Film (20 minutes):	“Teaching Teaching & Understanding Understanding”
Involvement:	Script-Writer, Director, and Co-Producer.
Availability:	Available on DVD (Epilogue by Professor John Biggs).
Languages:	Available in English, French, Spanish, Italian, Portuguese, German, and Danish.
Publisher:	Aarhus University Press, Aarhus University, Denmark.
Statistics:	Sold almost 6,000 DVD’s. Watched: 320,000+ times.
Homepage:	www.daimi.au.dk/~brabrand/short-film/

PROGRAM COMMITTEE WORK

Co-Chair:	LDTA 2010 + 2011 “Language Definitions, Tools, & Applications”
Jury Member:	DGS 2008 + 2009 (educational film festival) “Det Gyldne Snit” (aka., “The Golden Ratio”)
PC Member:	SBCARS 2017, SEAA 2017, VAMOS 2017, SPLC 2016, MODULARITY VISIONS 2016, SLE 2012, LDTA 2008, LDTA 2007.

KEYNOTES

July 6, 2009 (keynote):	ITiCSE 2009 Int’l Conf. on Innovation and Technology in Computer Science Education Paris, France
Nov. 16, 2007 (keynote):	Koli Calling 2007 Int’l Conf. on Computing Education Research Koli National Park, Finland
June 25, 2007 (invited speaker):	TeaConc 2007 Workshop on Teaching Concurrency Siedlce, Poland

TEACHING EXPERIENCE

Spring 2017:	IT Camp (for high-school girls), ITU (2 days)
Summer 2016 & 2017:	Boot-IT (for who never programmed before), ITU (3 days)
Fall 2015 - 2017:	“Automated Software Analysis”, ITU
Fall 2014 - 2017:	“Practical Concurrent & Parallel Programming”, ITU
Fall 2014 - 2017:	“Introductory Programming”, ITU
Spring 2014:	“Analysis/Test/Verification in the Presence of Variability”, PhD Course at ITU
Fall 2013:	“Global Software Development”, Int’l Global Collaboration Course (coordinated by ETHZ)
Fall 2011 & 2012:	“Introduction to Scripting, Databases, and System Architecture”, IT Uni. of Copenhagen
Spring 2011 - 2015:	“Interactive Web Services using Java and XML”, IT University of Copenhagen
Spring 2011 & 2012:	“Global Software Development”, IT University of Copenhagen + UFPE, Recife, Brazil
Fall 2010:	“Data-Flow Analysis”, Universidade Federal de Pernambuco (UFPE), Recife, Brazil (9h)
Spring 2008 - 2010:	“First-Year Projects”, IT University of Copenhagen
Fall 2007 - 2009:	“Project-work and Communication”, IT University of Copenhagen
Spring 2011, 2009, & 2008:	“Advanced Models & Programs” (2*2 weeks), IT University of Copenhagen
Spring & Fall 2008:	“Seminar on Teaching & Learning” (8 hours), For faculty at IT University of Copenhagen
Fall 2006 - 2009:	“Programming Paradigms” (2 weeks), Aalborg University
Spring 2004 - 2007:	“Concurrency” (Model-Based Design for Concurrency), Aarhus University
Spring 2006:	“Programming Languages” (2 weeks), Aarhus University
Fall 2005 & 2006:	“Semantics” (Structural Operational Semantics), Aarhus University
Fall 2006:	“University Studies in Education” (3 days), For faculty at Aarhus University
Spring 2005:	“Macro Seminar”, Aarhus University
Fall 2004:	“Concurrency”, EVU, Aarhus University
Fall 2004:	“Web Technology”, Aarhus University
Spring 2002:	“Macro Languages” (2 weeks), Aarhus University.