



Curriculum Vitæ for Tobias Wrigstad, PhD

Computing Science Division
Department of Information Technology
Uppsala University
SWEDEN

Work: +46 (18) 4711072
Cell: +46 (736) 777418
Fax: +46 (18) 511925
Email: tobias.wrigstad@it.uu.se

Date of Birth: October 29, 1976

Nationality: Swedish

Place of Birth: Stockholm, Sweden

Language skills: Native Swedish, excellent English, rusty German

Gender: Male

Research

Interests: Type systems, gradual and hybrid typing, statically and dynamically checked contracts, programming language design and implementation, object-oriented and functional programming, concurrent programming and automatic parallelisation, active objects, extensible languages, meta-programming, dynamic programming languages, program verification, ownership types and aliasing.

Education and Employment

Jan 2010– Assistant professor (biträdande lektor) at Department of Information Technology, Uppsala University, Uppsala, Sweden. Tenure Track position.

Aug 2009–June 2010 Associate professor (lektor) at Stockholm University, Sweden. Permanent position.

Sept 2007–Aug 2009 Post-doctoral research associate at Purdue University with Prof. Jan Vitek.

May 2006–Sept 2007 Senior lecturer at DSV, SU/KTH, Stockholm, Sweden.

May 2006 PhD, Royal Institute of Technology, Stockholm Sweden. Principal advisor, Dr. Dave Clarke (remotely from Utrecht and CWI, NL).

1999–2005 PhD student (Transferred to Royal Institute of Technology), Stockholm University, Sweden. Principal advisor, Dr. Dave Clarke (remotely from Utrecht and CWI, NL).

1995–1999 MSc in Computer and Systems Science (honours system not applicable in Sweden). Competence track: Software Engineering. Secondary track (biämne): Mathematics. Stockholm University, Sweden.

Refereed Publications

Nicholas Cameron, James Noble and Tobias Wrigstad. Tribal Ownership. *To appear at OOPSLA, 2010.*

Johan Östlund and Tobias Wrigstad. Welterweight Java. *To appear at TOOLS, 2010.*

Tobias Wrigstad, Francesco Zappa Nardelli, Sylvain Lebesne, Johan Östlund and Jan Vitek. Integrating Typed and Untyped Code in a Scripting Language. *Appeared at POPL 2010.*

Bard Bloom, John Field, Nathaniel Nystrom, Johan Östlund, Gregor Richards, Rok Strniša, Jan Vitek and Tobias Wrigstad. Thorn—Robust, Concurrent, Extensible Scripting on the JVM. *Appeared at OOPSLA 2009.*

Sylvain Lebesne, Gregor Richards, Johan Ostlund, Tobias Wrigstad and Jan Vitek. Understanding the Dynamics of JavaScript. *Appeared at STOP 2009*

Tobias Wrigstad, Patrick Eugster, John Field, Nate Nystrom and Jan Vitek Software Hardening: A Research Agenda. *Appeared at STOP 2009*

Tobias Wrigstad, Filip Pizlo, Fadi Meawad, Lei Zhao, and Jan Vitek Loci: Simple Thread-Locality for Java. *Appeared at ECOOP 2009.*

Dave Clarke, Tobias Wrigstad, Johan Östlund, and Einar Broch-Johnsen Minimal Ownership for Active Objects. *Appeared at APLAS, 2008.*

Johan Östlund, Tobias Wrigstad, Dave Clarke and Beatrice Åkerblom. Ownership, Uniqueness, Immutability. *Appeared at TOOLS, 2008.*

Johan Östlund, Tobias Wrigstad, Dave Clarke and Beatrice Åkerblom. Ownership, Uniqueness, Immutability. *Appeared at IWACO, 2007.*

Continued on next page...

Dave Clarke, Sophia Drossopoulou, James Noble and Tobias Wrigstad. Tribe—A Simple Virtual Class Calculus. *Appeared at AOSD 2007*. (Acceptance rate 18%)

Dave Clarke and Tobias Wrigstad. External Uniqueness is Unique Enough. *Appeared at ECOOP 2003*. 2003, Darmstadt, Germany. (Acceptance rate 20.5%)

Dave Clarke and Tobias Wrigstad. External Uniqueness. *10th Workshop on Foundations of Object-Oriented Languages (FOOL)*. 2003, New Orleans, USA.

Mats Skoglund and Tobias Wrigstad. Alias Control with read-only references. *Appeared at Sixth Conference on Computer Science and Informatics*. 2002, Durham, USA.

Mats Skoglund and Tobias Wrigstad. A Mode System for Read-Only References in Java. *Appeared at FTJFP 2001*. 2001, Budapest, Hungary.

Journal Publications

Tobias Wrigstad and Dave Clarke. Existential Owners for Ownership Types. *In Journal of Object Technology, May/June 2007*.

Tobias Wrigstad and Dave Clarke. External Uniqueness. *Accepted with minimal revision for Science in Computer Programming, July 2008. Final version forthcoming*.

Theses

Tobias Wrigstad. Ownership-Based Alias Management. *Department of Computer and Systems Sciences, Royal Institute of Technology*. 2006, Kista, Sweden.

Tobias Wrigstad. External Uniqueness: A Theory of Aggregate Uniqueness for Object-Oriented. *Licentiate Thesis, Department of Computer and Systems Sciences, Stockholm University*. 2004, Kista, Sweden.

Workshop Reports

Dave Clarke, Sophia Drossopoulou, Peter Müller, James Noble and Tobias Wrigstad. *Aliasing, Confinement, and Ownership in Object-Oriented Programming: IWACO Workshop Report*, ECOOP 2008 Workshop Reader, 2008

Dave Clarke, Sophia Drossopoulou, James Noble, and Tobias Wrigstad. *Aliasing, Confinement and Ownership in Object-Oriented Programming: IWACO Workshop Report*, ECOOP 2007 Workshop Reader, 2007. LNCS 4906.

Elvira Albert, Anindya Banerjee, Sophia Drossopoulou, Marieke Huisman, Atsushi Igarashi, Gary T. Leavens, Peter Müller, and Tobias Wrigstad. *Formal Techniques for Java-like Programs*, ECOOP 2008 Workshop Reader, 2008.

Editor Work

Tobias Wrigstad (ed.), *Proceedings of the nth International Workshop on Aliasing, Confinement and Ownership in Object-oriented Programming (IWACO)*, In conjunction with ECOOP 2007, Berlin, July 30th–August 3rd. DSV Report series No. 07-010. ISSN 1101-8526. ISRN SU-KTH/DSV/R-07/10-SE.

Technical Reports

Dave Clarke, Tobias Wrigstad, Johan Östlund, and Einar Broch-Johnsen Minimal Ownership for Active Objects. REPORT SEN-Ro803, June 2008. (*Extends the APLAS'08 work with a complete formalisation of Joelle's semantics, additional background and examples.*)

Dave Clarke and Tobias Wrigstad *External Uniqueness is Unique Enough*. Utrecht University Technical Report UU-CS-2002-48.

Dave Clarke, Sophia Drossopoulou, Peter Müller, James Noble, and Tobias Wrigstad. *Workshop proposal: 3rd International Workshop on Aliasing and Confinement. ECOOP 2009*.

Nate Nystrom, Jan Vitek, and Tobias Wrigstad. *Workshop proposal: 1st International Workshop on Script to Program Evolution (STOP). ECOOP 2009*.

Dave Clarke, Sophia Drossopoulou, James Noble, and Tobias Wrigstad. *Workshop Proposal: 3rd International Workshop on Aliasing, Confinement and Ownership in object-oriented systems (IWACO) 10 years of ownership. ECOOP 2008*.

Dave Clarke, James Noble, and Tobias Wrigstad. *Workshop proposal: 2nd International Workshop on Aliasing and Confinement. ECOOP 2007*.

Grant Applications

High-performance Distributed Event Stream Programming (Submitted to NSF in 2007). Patrick Eugster (PI) and Tobias Wrigstad (Co-PI).

Safe and Predictable High-performance Event Stream Programming (Submitted to NSF in 2008). Patrick Eugster (PI) and Tobias Wrigstad (Co-PI).

Incremental Software Hardening (Submitted to NSF 2008). Patrick Eugster (PI) and Tobias Wrigstad (Co-PI).

A Computational Model for High-Assurance Dynamic Information Systems (Submitted to ONR in 2008). Jan Vitek (PI) and Tobias Wrigstad. [FUNDED, \$200 000]

Collaborations: Beatrice Åkerblom (DSV, SE), Bard Bloom (IBM T.J. Watson, US), Einar Broch-Johnsen (U.

of Oslo, NO), Dave Clarke (KU Leuven, BE), Sophia Drossopoulou (Imperial College, UK), Patrick Eugster (Purdue, US), John Field (IBM T.J. Watson, US), Sylvain Lebresne (Purdue, US), James Noble (Victoria U. of Wellington, NZ), Nataniel Nystrom (IBM T.J. Watson, US), Johan Östlund (Uppsala University, SE), Mats Skoglund (DSV, SE), Rok Strniša (Cambridge, UK), Jan Vitek (Purdue, US), and Francesco Zappa Nardelli (INRIA, FR).

PhD Supervision

Johan Östlund, Department of Information Technology Uppsala University, 2010–.

Beatrice Åkerblom, DSV, Stockholm University (assistant advisor), 2006–.

Master Student Supervision

Beatrice Åkerblom, *CMM and SPICE—A comparison between two models for Software Process Improvement*, 2002.

Martin Wahlund, *Can the Use of Software Components Enhance Product Quality in the Gaming Industry?*, 2002.

Arthur Gaudio, *Towards Ownership-Oriented Garbage Collection*, 2003.

Örjan Lindström, *Mobile Software*, 2004.

Gustaf Cele and Sebastian Stureborg, *Ownership Types In Practise*, 2005.

Johan Östlund, *Realizing External Uniqueness*, 2006.

Branko Jeric and Johan Hanson, *Adding Read-only Modes to Ownership Types*, 2007.

Niklas Björkén and Maria Patrickson, *Facilitating Software Reuse Through Blobs and Blobjects*, 2008.

Sebastian Nyström and Jakob Jelita-Dobrzynski, *An exploratory study of errors made by novice programmers in dynamic programming languages*, 2008.

Andreas Amsenius, *Lightweight Threads on the JVM*, expected to finish August 2010.

Jonathan Olsson, *An Empirical Study of Overloading in Java*, expected to finish August 2010.

Leonidas Simupoulous, *Measuring Dynamicity in Python*, expected to finish August 2010.

Talks & Tutorials

2010: Speaker at UPMARC Summer School on Multicore Computing, June 21-24, 2010. “Alias Control Mechanism for Encapsulation, and Concurrent and Parallel Programming.”

Other Duties

Community Work: Workshop organiser for the International Workshop on Aliasing, Confinement and Ownership (IWACO) in conjunction with ECOOP 2007 and on the IWACO steering committee. Student volunteer chair ECOOP 2008. In 2009,

On the steering committee on the Workshop on Script to Program Evolution, STOP 2009–. Organiser of STOP 2009 and 2011. The 2011 STOP workshop is SIGPLAN sponsored and co-located with POPL 2011.

Program Committee Work: The International Workshop on Aliasing Confinement and Ownership (IWACO) in 2007 (as Program chair) and 2008. The International Workshop on Foundations of Object-Oriented Languages (FOOL) in 2008. Member of the program committee for European Conference on Object-Oriented Programming (ECOOP) in 2008. PC member on the workshop on Formal Techniques for Java-like Programs (FTJP) in 2008. Script to Program Evolution, (STOP) in 2009 (as program chair). Dynamic Languages Symposium (DLS) in 2009. Computing: the Australasian Theory Symposium (CATS) in 2010 and workshop on language descriptions tools and applications (LDTA) in 2010.

Refereeing: International Workshop on Aliasing, Confinement and Ownership (IWACO) 2003, Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA), several times, Programming Languages Design and Implementation (PLDI), European Conference on Object-Oriented Programming (ECOOP), Symposium on Principles of Programming Languages (POPL), The Elsevier Science of Computer Programming journal (SCP), European Symposium of Programming (ESOP), Script to Program Evolution (STOP), Dynamic Languages Symposium (DLS).

Honorary Assignments: 2004, member of five-person committee to redesign first-year computer science curriculum. Responsible for software engineering and programming education issues. 2003–2005, Head of Postgraduate Student Council, representing more than 50 PhD students. From 2005, program coordinator for competence track for software engineering given at Stockholm University and The Royal Institute of Technology. From January 2007, program coordinator for 3-year track on Computer and Systems Science.

Steering Committees: On the steering committee for the International Workshop on Aliasing, Confinement and Ownership (IWACO) since 2007. IWACO has rapidly grown to be one of the largest workshops held in conjunction with ECOOP.

Academic Visits

Visits: Dave Clarke at Utrecht University, October 2002 (2 weeks), May 2003 (3 weeks), December 2003 (2 weeks). Sophia Drossopoulou at Imperial College, June 2005 (1 week), January 2006 (1 week), May 2007 (1 week), March 2008 (1 week). IBM T.J. Watson, visiting John Field and others, February 2008 (1 week).

Visits Hosted: Dave Clarke, April 2002 (2 weeks) September 2004 (1 week), August 2005 (2 weeks) and June 2006 (2 weeks).

Software Developed

Compiler for the Java-like language Joline as part of my thesis work which was later extended into working compilers for Joe₃ (TOOLS 2008) and the active object's language Joelle (APLAS 2008).

At Purdue, I am developing a compiler for Thorn, a dynamic extensible programming language running on top of the JVM. The work involves rewriting the compiler in itself, generating Java bytecode, implementing Thorn's concurrency model (loosely based on Java isolates) and the Thorn's plugin model that allows arbitrary language extensions. My recent additions to Thorn include support for records, value types, default-values and named parameters for functions and function calls, and components. The latter notably includes a scheduler for concurrently executing Thorn processes.

I recently (October 2008) developed a plugin for thread-local heaps in Eclipse. Java programs are annotated with Java 1.5-style annotations which are checked in Eclipse and Java code is rewritten under the hood at compile-time to avoid unnecessary synchronisation for computation that is provably thread-local.

I've also written several wikis for on-line editable homepages for the Program Development Unit at DSV. Wiki software for event scheduling and description for a convention and an on-line registration system for the same event. \LaTeX packages and styles for internal use at DSV.

Affiliations

Association for Computing Machinery, Agile Alliance, Vi åker jeep.

Work History

Jan 2010– Assistant Professor (biträdande lektor) at the Department of Information Technology, Uppsala University (Computing Science Division).

August 2009–June 2010 Associate professor at the De-

partment of Computer and Systems Sciences (DSV), Stockholm University.

September 2007–August 2009 Post doctoral research associate under Prof. Jan Vitek at Purdue University, IN, USA, working on the development of a dynamic, extensible programming language in collaboration with IBM T.J. Watson research lab.

2007 Program coordinator for 3-year BA education in Computer and Systems Science.

2006–2007 Full-time senior lecturer with responsibility for four courses (Introductory Software Engineering, Formal Methods in Software Engineering, Dynamic Programming Languages and Advanced Issues in Object-Orientation). DSV, Sweden.

2006–2007 In charge of a one-week software engineering course (given 14 times, to be given 10 more times) for senior software developers at Ericsson under the auspices of DSV/KTH, Sweden. For these installments, I have been teaching two full days on Software Architecture, Human factors in Software Development and a one-hour introduction to The Scala Programming Language, and later also one day on aspect-oriented programming.

2005–2007 In charge of the Software Engineering competence track at DSV.

2004–2006 Part-time junior lecturer (in conjunction with PhD studies) with responsibility for two courses (Introductory Software Engineering and Advanced Issues in Object-Orientation). Also misc. lecturing on various programming courses, and tutoring in C (2004). DSV, Sweden.

2000–2004 Full-time PhD student. During this time, I was responsible for the introductory course in software engineering. Also misc. lecturing on various programming and software engineering courses, and several years tutoring in C. DSV, Sweden.

1999 Tutoring in C. DSV, Sweden.

1997–2002 Various work for Stockholm University (Department of Research in Bilingualism and Department of Nordic Languages) as a graphical designer.

Assignments and Accomplishments

Computer Science Related

June 2007 Was a nominee for the "Teacher of the Year" award at Stockholm University.

June 2007 Attended a two-day SCRUM master course taught by Jeff Sutherland and Jens Østergaard to become a certified SCRUM master.

November 2006 Co-lecturing with software architect

from Sun Microsystems on “The Future of Java” at the EurOpen.se’s Freenix Forum 2006.

October 2006 Lecturing twice on “The Human Factors in Software Development” for developers and managers at Ericsson Radio Systems in Kista.

February 2006 Co-lecturing with software architect from Sun Microsystems on dynamic programming languages and Scala for IT Consultants in Gothenburg.

September 2004 Panel member at the Swedish Java Forum on “What’s new in Java 5.0”.

Other

May 2010 Guest of Honour at Italian Role-playing convention InterNosCon.

March 2010 Lecturing about “Abusive Game Design” at ITU in Copenhagen. (<http://vimeo.com/10030923>)

2008 Debuted as internationally published role-playing game author for two role-playing games that I wrote in 2005 and 2006 (in Italian, published by Narrativa).

2006 Involved behind the scenes as a content creator and gamemaster for the pervasive game Prosopopoeia, a research project at SICS led by Annica Waern.

2000–present Founding and active member of Swedish Freeform Role-play collective “Vi åker jeep”, creating freeform role-playing games and representing Swedish style freeform role-playing at conventions in Sweden, Denmark, Norway and Finland.

August 2006 Guest of Honour and invited speaker at Ropecon, the largest Finnish role-playing convention with 3000 participants.

2005–2006 Member of the core organising team of the 10th Knutpunkt conference on role-playing in Stockholm, Sweden bringing together more than 150 people from Sweden, Norway, Finland, Denmark, Germany, The Netherlands, England, America and Australia.

2005–2006 Editor for the book *Role, Play, Art*, a collection of scholarly and popular science articles on role-playing released in conjunction with the 10th Knutpunkt conference in Sweden.

1996–1997 Member of the core organising team for the Stockon97 role-playing convention in Stockholm for about 200 people.

1996–1998 Board member of SVEROK Stockholm (SVEROK is the Swedish association for board games and role-playing games). SVEROK is one of Sweden’s largest youth organisations and Stockholm its biggest district.

Misc. Publications

Fritzon, T., and Wrigstad, T., (Eds.) *Role, Play, Art—Collected Experiences of Role-Playing*. (April 2006), Föreningen Knutpunkt, Stockholm. ISBN 91-631-8853-8.

The Nuts and Bolts of Jeepform, In *M. Montola and J. Stenros (eds.) Playground Worlds¹—Creating and Evaluating Experiences of Role-Playing Games*, Solmukohta 2008.

Behind the Facade of A Nice Evening with the Family, In *M. Montola and J. Stenros (eds.) Playground Worlds¹—Creating and Evaluating Experiences of Role-Playing Games*, Solmukohta 2008 (With Anders Hultman and Anna Westerling).

Interests and Activities

Theatre, jeepform and freeform role-playing, singing, creative writing, programming and collecting programming languages, typography, graphic design, literature and musical exotica.

References

Prof. **Jan Vitek**
Purdue University
305 N. University Street
Dept of Computer Sciences,
Purdue University,
West Lafayette, IN 47907, USA
Phone: +1 (765) 494 6531 (Office)
Email: jv@cs.purdue.edu

Prof. **Dave Clarke**
Katholieke Universiteit Leuven
Groot Begijnhof 47-4
B-3000 Leuven
BELGIUM
Phone: +32 16 236 009 (Office)
Email: david.clarke@cs.kuleuven.be

Prof. Prof. Dr. Dr. **Love Ekenberg**
DSV, Stockholm University
Forum 100
164 40 Kista, SWEDEN
Department of Information Technology and Media,
Mid Sweden University
851 70 Sundsvall, SWEDEN
Phone: +46-8-161679 (Office)
Email: lovek@dsv.su.se

¹The Playground Worlds book is a collection of scholarly and popular science articles on role-playing released in conjunction with the 12th Knutpunkt conference in Finland.