

# STÉPHANE DUCASSE

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43 years  
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**Keywords:** Dynamically typed languages, Language Design and Security, Software Engineering, Object-Oriented Programming, Reflective Programming, Meta-Object Protocol, Meta-Modeling, Reengineering, Reverse Engineering, Program Understanding, Integrated Development Environments, Teaching Novices.

**Indexes:** According to Google Scholar, *H-index*: 41. *G-index*: 70. Max Cite: 334. Total 5501 citations. Erdős number 4: O. Nierstrasz - D. M. Jackson - E. Rodney Canfield - P. Erdős

## Education and Titles

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May 2002	PrivatDozent of the University of Bern.
Sep 2001	Habilitation à diriger des recherches of Université Pierre et Marie Curie (Paris 6).
1993/1996	Ph.D. Thesis of the Université de Nice-Sophia Antipolis (Laboratoire I3S).

## Professional Employment History

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2011–...	Scientific officer of the INRIA Lille Nord Europe research center.
Sep 2007–...	Senior Researcher (directeur de recherche) INRIA Lille Nord Europe. Leader of the RMOD INRIA team (4 permanent members, 1 postdoc, 2 engineers, 6 Ph.Ds).
2005–2007	Full Professor of the Université de Savoie, Leader of the Software Engineering team.
May 2005	Professor at the University of Bern. Leader of the SNF project RECAST and co-responsible of the Software Composition Group directed by Pr. O. Nierstrasz.
1996–2002	Lecturer at the University of Bern in the Software Composition Group.

## Awards

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2011	Distinguished Visiting Fellowship Award of the Royal Academy of Engineering.
2010	ESUG 2010 best Smalltalk book for <i>Dynamic Web Development with Seaside</i> , 2010.
2008	Best award paper of IEEE Working Conference on Reverse Engineering 2008.
2003	Best award paper of Joint Modular Language Conference 2003.

## Selective Grants

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Dec 2005	Recipient of the French "Agence Nationale de la Recherche" 2005 Jeune Chercheur programme. 20% acceptance rate. 130 KEuros.
Apr 2002	Recipient of the Swiss National Science Foundation 2002 Professorship programme. 18% acceptance rate. 500 KEuros allocated for 4 years. For this national programme, there were 233 candidates for 44 positions (18%) and 3 have been selected in Computer Sciences. This award funded the research project, RECAST, by providing four years of salary and infrastructure and 2 PhD positions.

## Student Distinctions

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2006	Award 2006 of the Denert Foundation for the Ph.D. of A. Bergel: Classboxes: Controlling Visibility of Class Extensions.
2003	Award 2003 of the Denert Foundation for the Ph.D. of M. Lanza: Object-Oriented Reverse Engineering - Coarse-grained, Fine-grained, and Evolutionary Software Visualization.
2009	Prize for the Ph.D. of M. Denker from the Faculty of Mathematics, University of Bern.
2008	DrGeoII - H. Fernandes - PhD student 2008 - ESUG Innovation Award (first).
2005	Pier - L. Renggli - Master student 2007 - ESUG Innovation Award (third).
2004	Smallwiki - L. Renggli - Master student - ESUG Innovation Award (third).

## Publications

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29 International Journals    3 Transactions of Software Engineering (TSE), 1 Transactions of Programming Languages and Systems (TOPLAS), 7 Journal of Computer Languages, Systems and Structures, 3 Journal of Software Maintenance and Evolution: Research and Practice (JSME), Journal of Software and Systems Modeling (SOSYM), 4 Information and Software Technology (IST), 1 IEEE Software ...  
73 International Conferences    4 Invited Papers, 3 Book Chapters, 3 National Journals, 9 National Conferences, 8 OOPSLA (18%), 3 ECOOP (16 %), 1 FSE (16%), 1 ASE (9%), 8 ICSM (21%-35%), 9 WCRE (25%-35%), 2 UML, 6 TOOLS (25%)

## Professional Activities

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*2 Habilitation evaluation, 18 Ph.D. thesis evaluation*

*6 International Conference General Chair:* ESUG International Conference on Smalltalk (05, 06, 09, 10 - 150 participants), WCRE 2009 (90 ppts), LMO 2005 (60 ppts).

*International Journal Steering Board:* open-archive Journal of Object Technology (<http://www.jot.fm>)

*40 International Conference Program Committee Participation*

ECOOP Core A\*, Models Core B, ICSM Core A, WCRE Core B, TOOLS Core B, CSMR Core B.

*80 International Conference reviewer* for OOPSLA, ECOOP, FSE/ESEC, ICSM, MODELS...

*International Journal reviewer:* Transaction on Software Engineering (Core A\*), Journal of Software Maintenance and Evolution: Research and Practice, Journal of Software and Systems Modeling, Information and Software Technology, Journal on Computer Programming (Core A),...

*Research Network Building:* European Science Foundation Network: "RELEASE: Research Links to Explore and Advance Software Evolution" (02-05).

## Software Artefacts

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I value software development and building of communities around open-source software.

Since 1996, I'm co-developer of Moose an open-source software analysis platform — <http://moose.unibe.ch> used by Université of Bern, Lugano, Annecy, Louvain-la-neuve, Lille, Bruxelles, Santiago. More than 150 publications are based on Moose.

Since 2008, I'm co-developer of Pharo: a smalltalk inspired environment — <http://www.pharo-project.com>. Pharo is a fork from Squeak and we are rewriting large part of it. It is used by several companies, universities and research groups world-wide.

## Keynotes and Invited Courses

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*Conference*                      Software Composition 2009, Smalltalks 2009

*Keynotes*

*Invited Papers*                with O. Nierstrasz, Software Composition 2005, ESEC/FSE'05, Generative Programming and Component Engineering, 2005

*Invited Courses*            Università di Torino (5 days), 2007, 2008

Universitat Politècnica de catalunya (5 days), 2010

Università di Torino Timisoara (5 days), 2002

Universidad de Buenos Aires (3 days), 2009

## Past Collaborative Research Projects

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2 european projects	FAMOOS (96-99, Nokia, Daimler, Sema), PECOS (00-02, ABB, IBM)
6 swiss national projects	Recast (02-06), Fonds National de la Recherche Suisse (96-06)
3 french national projects	Jeune Chercheur ANR Cook (05-08 – 20% accept.), Squalé FUI (2008-2010), Cutter (2010-2013 – 18% accept.)
Microsoft Research Rotor	Trait in C# (16% accept.)

## Collaborations

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<b>Switzerland</b>	Software Composition Group - University of Bern (O. Nierstrasz)
<b>Belgium</b>	Soft (Prog) Lab - University of Brussels (T. D'Hondt)
<b>USA</b>	Portland University (A.P. Black)
<b>France</b>	URIA - Ecole des Mines de Douai (N. Bouraqadi)
<b>Chile</b>	Pleaid DCC - Santiago (A. Bergel/J. Fabry)

## Scientific Reviewer

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I act as reviewer for IST (Information Society Technology), EPSRC (UK), for the Fonds de Recherche sur la Nature et les Technologies of Quebec – Canada, NWO (Dutch National Research Council), NSERC (Natural Sciences and Engineering Research Council of Canada), and ANR (Agence Nationale de la Recherche), IWT-Flanders (Belgium), and SSF (Swedish Science Foundation).

## Funding ID

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2010-2012. ANR Project Cutter - Reengineering (LIRMM + INRIA) - 150 Keuros (one Ph.D.)  
2008-2010. Squalé project - Reengineering (AirFrance, Peugeot, Qualixo) - 260 Keuros (1 Ph.D. 1 postdoc)  
2005-2008. ANR Project Recast - Reengineering - 130 Keuros (20% acceptance)  
2002-2006. Swiss National Science Foundation 2002 Professorship - 500 Keuros (18% acceptance)

## References

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**Prof. O. Nierstrasz**, University of Bern, oscar@iam.unibe.ch  
**Prof. A. Black** Portland State University black@cs.pdx.edu  
Directeur de recherche CNRS **J.-P. Briot**, Laboratoire d'informatique de Paris 6, jean-pierre.briot@lip6.fr  
**Prof. T. D'Hondt**, Head of the PROG Laboratory of the University of Brussels tjdhondt@vub.ac.be  
**Prof. J.-M. Jezequel**, IRISA - Université de Rennes, jezequel@irisa.fr  
**Dr. D. Thomas** Founder and CEO of Object Technology International (OTI), CEO of Bedarra Corporation, dave@bedarra.com

## Selection of Refereed Articles in International Journals

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- A. Lienhard, S. Ducasse and T. Girba, Taking an Object-Centric View on Dynamic Information with Object Flow Analysis, In Journal of Computer Languages, Systems and Structures, Volume 35, Elsevier, pp. 63–79, 2009
- S. Ducasse and D. Pollet, Software Architecture Reconstruction: A Process-Oriented Taxonomy, In IEEE Transactions on Software Engineering, 2009
- S. Ducasse, T. Girba, A. Kuhn and L. Renggli, Meta-Environment and Executable Meta-Language using Smalltalk: an Experience Report, In Journal of Software and Systems Modeling (SOSYM), February, Volume 8, Springer Verlag, pp. 5–19, 2009
- D. Cassou, S. Ducasse and R. Wuyts, Traits at Work: the design of a new trait-based stream library, In Journal of Computer Languages, Systems and Structures, Volume 35, Elsevier, pp. 2–20, 2009
- A. Bergel, S. Ducasse, Oscar Nierstrasz and R. Wuyts, Stateful Traits and their Formalization, In Journal of Computer Languages, Systems and Structures, Volume 34, Elsevier, pp. 83–108, 2008
- S. Ducasse, A. Lienhard and L. Renggli, Seaside: A Flexible Environment for Building Dynamic Web Applications, In IEEE Software, Los Alamitos, CA, USA, Volume 24, IEEE Computer Society, pp. 56–63, 2007
- K. Gybels, R. Wuyts, S. Ducasse and M. D'Hondt, Inter-Language Reflection – A Conceptual Model and Its Implementation, In Journal of Computer Languages, Systems and Structures, July, Volume 32, Elsevier, pp. 109–124, 2006, SCI impact factor 0.467 (2005).
- S. Ducasse, O. Nierstrasz and M. Rieger, On the Effectiveness of Clone Detection by String Matching, In Journal of Software Maintenance and Evolution: Research and Practice (JSME), January, Volume 18, pp. 37–58, 2006, SCI impact factor 0.457 (2005).
- S. Ducasse, O. Nierstrasz, N. Schaerli, R. Wuyts and A. Black, Traits: A Mechanism for fine-grained Reuse, In ACM Transactions on Programming Languages and Systems (TOPLAS), March, Volume 28, pp. 331–388, 2006, SCI impact factor 1.404 (2005).
- S. Ducasse and M. Lanza, The Class Blueprint: Visually Supporting the Understanding of Classes, In Transactions on Software Engineering (TSE), January, Volume 31, IEEE Computer Society, pp. 75–90, 2005, SCI impact factor 1.967, PDF , DOI
- A. Bergel, S. Ducasse and O. Nierstrasz, Analyzing Module Diversity, In Journal of Universal Computer Science, November, Volume 11, pp. 1613–1644, 2005, SCI impact factor 0.337
- A. Bergel, S. Ducasse, O. Nierstrasz and R. Wuyts, Classboxes: Controlling Visibility of Class Extensions, In Journal of Computer Languages, Systems and Structures, December, Volume 31, Elsevier, pp. 107–126, 2005, SCI impact factor 0.467.
- M. Lanza and S. Ducasse, Polymetric Views—A Lightweight Visual Approach to Reverse Engineering, In Transactions on Software Engineering (TSE), September, Volume 29, IEEE Computer Society, pp. 782–795, 2003, SCI impact factor 1.73

## Selected Refereed Articles in Top International Conferences

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- T. van Cutsem, A. Bergel, S. Ducasse and W. De Meuter, Adding State and Visibility Control to Traits using Lexical Nesting, In Proceedings ECOOP 2009, Lecture Notes in Computer Science, Springer, 2009.
- S. Ducasse, R. Wuyts, A. Bergel and O. Nierstrasz, User-Changeable Visibility: Resolving Unanticipated Name Clashes in Traits, In Proceedings of 22nd International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA'07), New York, NY, USA, October, ACM Press, pp. 171–190, 2007, Acceptance rate: 33/156:21%.
- A. Lienhard, S. Ducasse and G. Arévalo, Identifying Traits with Formal Concept Analysis, In Proceedings of 20th Conference on Automated Software Engineering (ASE'05), November, IEEE Computer Society, pp. 66–75, 2005, acceptance rate: 28/291 = 9%.
- A. Bergel, S. Ducasse and O. Nierstrasz, Classbox/J: Controlling the Scope of Change in Java, In Proceedings of 20th International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA'05), New York, NY, USA, ACM Press, pp. 177–189, 2005, acceptance rate: 25/142 = 17%.
- N. Schaerli, A. P. Black and S. Ducasse, Object-oriented Encapsulation for Dynamically Typed Languages, In Proceedings of 18th International Conference on Object-Oriented Programming Systems, Languages and Applications (OOPSLA'04), October, pp. 130–149, 2004, acceptance rate: 27/174 = 16%.
- N. Schaerli, S. Ducasse, O. Nierstrasz and R. Wuyts, Composable Encapsulation Policies, In Proceedings of European Conference on Object-Oriented Programming (ECOOP'04), June, LNCS, Volume 3086, Springer Verlag, pp. 26–50, 2004, acceptance rate: 25/132 = 19%
- N. Schaerli, S. Ducasse, O. Nierstrasz and A. Black, Traits: Composable Units of Behavior, In Proceedings of European Conference on Object-Oriented Programming (ECOOP'03), July, LNCS, Volume 2743, Springer Verlag, pp. 248–274, 2003, acceptance rate: 18/88 = 20%.
- P. Mougín and S. Ducasse, OOPAL: Integrating Array Programming in Object-Oriented Programming, In Proceedings of 17th International Conference on Object-Oriented Programming Systems, Languages and Applications (OOPSLA'03), October, pp. 65–77, 2003, acceptance rate: 26/142 = 18%.

- A. P. Black, N. Schaerli and S. Ducasse, Applying Traits to the Smalltalk Collection Hierarchy, In Proceedings of 17th International Conference on Object-Oriented Programming Systems, Languages and Applications (OOPSLA'03), October, Volume 38, pp. 47–64, 2003, acceptance rate:  $26/142 = 18\%$ .
- M. Lanza and S. Ducasse, A Categorization of Classes based on the Visualization of their Internal Structure: the Class Blueprint, In Proceedings of 16th International Conference on Object-Oriented Programming Systems, Languages and Applications (OOPSLA '01), ACM Press, pp. 300–311, 2001, acceptance rate:  $27/145 = 18\%$ .
- S. Demeyer, S. Ducasse and O. Nierstrasz, Finding Refactorings via Change Metrics, In Proceedings of 15th International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA '00), New York NY, ACM Press, pp. 166–178, 2000, Also in ACM SIGPLAN Notices 35 (10), acceptance rate:  $26/142 = 18\%$ , SCI impact factor 0.190, ranked 66/77.