Dr. Jacques Klein
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Education

2003:	Engineering School, Mulhouse	Computer Science
2006:	Ph.D., University of Rennes 1	Computer Science

Appointments

2010-*present*:	Research Scientist,
	Faculty of Science, Technology and Communication, University of Luxembourg
	SnT member
2009-2010:	Project Leader, Public Research Center Gabriel Lippmann, Belvaux – Luxembourg
2007-2009:	Post-Doc, University of Luxembourg
2003-2006:	INRIA PhD Student, INRIA Rennes Bretagne Atlantique, Triskell Team

Current PhD Students Supervision :

"Daily" advisor (Prof. Y. Le Traon being the supervisor):

Oct. 2010-:	Alexandre Bartel	Static Analysis for Android Security
		AFR funding
Sept. 2011-:	Phu Nguyen	Model-Driven Security
		FNR CORE funding
Oct. 2011-:	Kevin Allix	Android Applications: Malware and Repackaging Detection
		UL structural position
Aug. 2013-:	Thomas Hartmann	Smart Grid Cyber-Security
		SnT funding (AFR under submission)
Sept. 2013-:	Li Li	Securing Android Applications
		SnT funding (AFR under submission)

Involvement (partial) in the following PhD Thesis:

Oct. 2011-:	Christopher Hénard	Test of Large Scale Software Product Line
		PhD student mainly advised by Prof. Y. Le Traon

Assignments of Importances:

- Co-coordinator (with Prof. Tom Mens) of the ERCIM New No. 88, Jan. 2012, Special Theme: "Evolving Software"

- Organizing Chair of the 6th IEEE International Conference on Software Testing, Verification and Validation (ICST 2013)

- Tools Demonstration Track Co-Chairs at CSMR 2013 (European Conference on Software Maintenance and Reengineering)

- Conference Program Committee Member: NIER@ICSE 2014 (New Ideas and Emergent Results at ICSE), QSIC 2013 (13th International Conference on Quality Software), AOSD 2013 (12th International Conference on Aspect-Oriented Software Development) , SEAA 2010

- Workshop Program Committee Member: JLDP 2013, CMA@MODELS 2013, CMA@RE 2013, VAO 2013, JLDP 2012, JLDP 2011, VAST 2011, MDSM 2011, Meta-Aspect 2010

- Luxembourgian representative at the ERCIM Software Evolution Working Group

- Reviewer of the following journals: SOSYM (Software and Systems Modeling, Springer), TAOSD (LNCS Transactions on Aspect-Oriented Software Development journal), SPE (Software: Practice and Experience), Springer Transactions on Pattern Languages of Programming

- External reviewer of the following conferences: TOOLS'12, ICST'12, ICSE@NIER'12, ICSE'09, MODELS'09, EMISA'09, MODELS'07, MODELS'06, ISSRE'06, LMO'O6, SCESM'06

- Member of the University Council as representative of the FSTC's scientific, administrative and technical staff

Major research projects:

2013:	**Google Faculty Research Award** (50 k$ to share with Pennsylvania State University and TU Darmstadt) Static Analysis for Android Security
2013-2015:	MODEL (MOdel-driven aDaptive usEr-centered service Lines) FNR Funding, CORE program: 190 k€, **Co-Principal Investigator** (with CRP-Tudor)
2012-2016:	CREOS Partnership (Smart Grid Cyber-Security) **Principal Technical Investigator**
2011-2014	MITER (Modeling, Composing and Testing of Security Concerns) FNR Funding, CORE program: 320 k€, **Principal Investigator**
2012:	DG-Track (Dangerous Goods Transport Tracking and Tracing in the Medical Sector) ESA Funding: 40 k€
2011-2014:	DYNOSOAR (Dynamic and Composite Service-Oriented Architecture Security Testing) Univ. of Luxembourg Funding: 280 k€, main project initiator
2009-2012:	SPLIT (Combine Software Product Line and Aspect-Oriented Software Development) FNR-CNRS Funding, INTER program: 430 k€ **Main initiator and investigator**. Leave the project in March 2010
2009-2012	SETER FNR Funding, CORE program: 268 k€, main project initiator
2004-2006:	European Network of Excellence on Aspect-Oriented Software Development Participation in this network as INRIA PhD Student
since 2007:	Several AFR (FNR program to fund PhD students and Post-Docs)

Talk Lectures (Invited or during a visit)

- SIMULA, "Examples of Generic and Specific AOM Weavers with some Related Problems...", (Dec. 2010, Oslo)

- University of Luxembourg, Lassy seminar, "Aspect Model Unweaving" (Oct. 2009, Luxembourg)

- SINTEF (Cooperative and Trusted Systems department), "Aspect Model Unweaving" (Sept. 2009, Oslo)

- ISC Day, "Model-Driven Engineering with Kermeta" (June 2009, Luxembourg)

- VERITY Closed Workshop "MDE to Help Dependability" (November 2008, Newcastle Upon Tyne)

- Business meets Research Day "Design of Dependable and Secure Software Systems" (October 2008, Luxembourg)

- ADAM Team, Lille University, INRIA Lille-Nord Europe "Behavioural Aspects and Weaving" (end of 2006, Lille)

- University of Luxembourg (2006 and 2007, Luxembourg)

- Trinity College Dublin, Distributed Systems Group. "Behavioural Aspects and Weaving" (August 2006).

Publication Statistics (Aug. 2013, Google scholar):

Journal Papers	4
Conference Papers	15
Workshop papers	15
Google Citations	627
h-index	12

Main Research Interests:
Since 2011: Software Security (mainly Android Security) (6 publications)
Since 2003: Model-Driven Engineering, Aspect-Oriented Modeling (22 publications)
Since 2003: Model-Driven Engineering, Software Product Line (10 publications)
Since 2010: Software Testing (7 publications)
Since 2011: Software Evolution & Dynamic Adaptive Systems (4 publications)

Publications

Articles (referred journals)

1. Tom Mens, Jacques Klein: Evolving Software - Introduction to the Special Theme. ERCIM News 2012(88): (2012)

2. G. Perrouin, S. Oster, S. Sen, J. Klein, B. Baudry, and Y. le Traon. Pairwise testing for software product lines: Comparison of two approaches. Software Quality Journal, Springer, Volume 20, Issue 3 (2012), Page 605-643.

3. Jörg Kienzle, Wisam Al Abed, Franck Fleurey, Jean-Marc Jézéquel and Jacques Klein, Aspect-Oriented Design with Reusable Aspect Models, In Transactions on Aspect-Oriented Software Development (TAOSD), LNCS 6210, Springer 2010, p. 272-320

4. Jacques Klein, Franck Fleurey and Jean-Marc Jézéquel, Weaving Multiple Aspects in Sequence Diagrams, In Transactions on Aspect-Oriented Software Development (TAOSD), LNCS 4620, Springer, 2007, p 167-199.

International Conferences with program committee

1. Damien Octeau, Patrick McDaniel, Somesh Jha, Alexandre Bartel, Eric Bodden, Jacques Klein and Yves Le Traon, Effective Inter-Component Communication Mapping in Android: An Essential Step Towards Holistic Security Analysis, Usenix Security 2013, Washington D.C., USA. (acceptance rate: 15.88%, 44/277)

2. Tegawendé F. Bissyandé, David Lo, Lingxiao Jiang, Laurent Réveillère, Jacques Klein, Yves Le Traon, Got Issues? Who Cares About It? An Investigation of Issue Trackers of 10^5 Projects, The 24th IEEE International Symposium on Software Reliability Engineering, ISSRE 2013, Pasadena, CA, USA. To appear. (acceptance rate: 35.11%, 46/131)

3. Phu H. Nguyen, Jacques Klein, Max Kramer and Yves Le Traon, A Systematic Review of Model-Driven Security, The 20th Asia-Pacific Software Engineering Conference, APSEC 2013, Bangkok, Thailand. To appear. (acceptance rate: 36.52%, 61/167)

4. Christopher Henard, Mike Papadakis, Gilles Perrouin, Jacques Klein, and Yves Le Traon Multi-objective Test Generation for Software Product Lines, 17th International Software Product Line Conference (SPLC 2013), Tokyo, Japan. To appear. (acceptance rate: 32.72%, 18/55)

5. Max E. Kramer, Jacques Klein, Jim R. H. Steel, Brice Morin, Jörg Kienzle, Olivier Barais, and Jean-Marc Jézéquel, Achieving Practical Genericity in Model Weaving through Extensibility, in International Conference on Model Transformation (ICMT), June 2013, Budapest, Hungary, (acceptance rate: 20.69%, 12/58)

6. Christopher Henard, Mike Papadakis, Gilles Perrouin, Jacques Klein and Yves Le Traon, Towards Automated Testing and Fixing of Re-engineered Feature Models, In the New Ideas & Emerging Results Track of the International Conference of Software Engineering (NIER@ICSE), 18-26 May 2013, San Francisco, USA, (acceptance rate: 22%, 31/143)

7. Phu Nguyen, Gregory Nain, Jacques Klein, Tejeddine Mouelhi and Yves Le Traon, Model-Driven Adaptive Delegation, In 12th International Conference on Aspect Oriented Software Development -AOSD.13, March 2013, Fukuoka, Japan (acceptance rate: 23%, 17/72)

8. Alexandre Bartel, Jacques Klein, Martin Monperrus, Yves Le Traon: Automatically Securing Permission-Based Software by Reducing the Attack Surface: An Application to Android, in the IEEE/ACM International Conference on Automated Software Engineering, ASE '12, Sep. 2012, Essen, Germany (short paper, acceptance rate: 45/138=32.60%, 21 long+ 24 short)

9. Gilles Perrouin, Brice Morin, Franck Chauvel, Franck Fleurey, Jacques Klein, Yves Le Traon, Olivier Barais, Jean-Marc Jézéquel. Towards Flexible Evolution of Dynamically Adaptive Systems, In the New Ideas & Emerging Results Track of the International Conference of Software Engineering (NIER@ICSE), Zurich, Switzerland, 2012, To appear (acceptance rate: 17.68%, 26/147)

10. Mauricio Alferez, Nuno Amalio, Selim Ciraci, Franck Fleurey, Joerg Kienzle, Jacques Klein, Max Kramer, Sebastien Mosser, Gunter Mussbacher,Ella Roubtsova and Gefei Zhang. Aspect-Oriented Model Development at Different Levels of Abstraction, in Seventh European Conference on Modelling Foundations and Applications (ECMFA 2011), Birmingham, UK, 2011 (acceptance rate: 36%, 19/53)

11. Brice Morin, Jacques Klein, Jörg Kienzle and Jean-Marc Jézéquel. Flexible Model Element Introduction Policies for Aspect-Oriented Modeling, In 13th ACM/IEEE International Conference on Model Driven Engineering Languages and Systems (MODELS 2010), Springer LNCS 6395, p. 63-77, Oslo, Norway, October 3-8, 2010 (acceptance rate: 20.8%, 43/207)

12. Gilles Perrouin, Sagar Sen, Jacques Klein, Benoit Baudry and Yves Le Traon. Automated and Scalable T-wise Test Case Generation Strategies for Software Product Lines, In Third International Conference on Software Testing, Verification and Validation (ICST 2010), p. 459-468, IEEE Computer Society, Paris, France, April 6-10, 2010 (acceptance rate: 26.5%, 41/154)

13. Jacques Klein, Jörg Kienzle, Brice Morin, Jean-Marc Jézéquel, Aspect Model Unweaving, In 12th ACM/IEEE International Conference on Model Driven Engineering Languages and Systems (MODELS 2009), LNCS 5795, p 514-530, Denver, Colorado, USA, October 2009 (acceptance rate: 16%, 34/211)

14. Jörg Kienzle, Wisam Al Abed, Jacques Klein, Aspect-Oriented Multi-View Modeling, In 8th International Conference on Aspect Oriented Software Development (AOSD.09), ACM, March 2009, Charlotteville, Virginia, USA, pp. 87-98. (acceptance rate: 22%, 19/86)

15. Gilles Perrouin, Jacques Klein, Nicolas Guelfi, Jean-Marc Jézéquel, Reconciling Automation and Flexibility in Product Derivation, In 12th International Software Product Line Conference (SPLC 2008), IEEE, pp. 339-348, Sept. 2008. Limerick, Ireland. (acceptance rate: 30%, 33/110)

16. Olivier Barais, Jacques Klein, Benoit Baudry, Andrew Jackson, Siobhán Clarke, Composing Multi - View Aspect Models,7th IEEE International Conference on Composition Based Software Systems (ICCBSS), February, 25-29, 2008 - Madrid, Spain

17. Jacques Klein, Loic Helouet and Jean-Marc Jézéquel, Semantic-based Weaving of Scenarios, In Proc. of the 5th International Conference on Aspect Oriented Software Development (AOSD.06), pp. 87-98, ACM, March 2006. Bonn, Germany (acceptance rate: 21%, 20/95).

Peer-Reviewed International Workshop Papers

1. Christopher Henard, Mike Papadakis, Gilles Perrouin, Jacques Klein, and Yves Le Traon Assessing Software Product Line Testing via Model-based Mutation: An Application to Similarity Testing, 9th Workshop on Advances in Model Based Testing (A-MOST 2013), Co-located with the 6th IEEE International Conference on Software Testing, Verification and Validation (ICST 2013). To appear.

2. Christopher Henard, Mike Papadakis, Gilles Perrouin, Jacques Klein, and Yves Le Traon PLEDGE: A Product Line Editor and Test Generation Tool, Demonstrations and Tools, 17th International Software Product Line Conference (SPLC 2013), Tokyo, Japan. To appear.

3. Alexandre Bartel, Jacques Klein, Martin Monperrus, Yves Le Traon: Dexpler: Converting Android Dalvik Bytecode to Jimple for Static Analysis with Soot, in SOAP workshop, ACM Sigplan International Workshop on the State Of The Art in Java Program Analysis (2012), Beijing, June 14th 2012.

4. Max E. Kramer, Jacques Klein, Jim R. H. Steel, Building Specifications as a Domain-Specific Aspect Language, Seventh Workshop on Domain-Specific Aspect Languages, DSAL'12@AOSD, March 27, 2012, Potsdam, Germany.

5. P. Istoan, J. Klein, G. Perrouin, J.-M. Jézéquel, A Metamodel-based Classification of Variability Modeling Approaches, In VARY International Workshop affiliated with ACM/IEEE 14th International Conference on Model Driven Engineering Languages and Systems (Vary@MODELS2011), oct. 2011, New Zeeland,

6. Alexandre Bartel, Benoit Baudry, Freddy Munoz, Jacques Klein, Tejeddine Mouelhi and Yves Le Traon, Model Driven Mutation Applied to Adaptative Systems Testing, In Mutation 2011 (@ICST), Berlin, Germany, 2011 (acceptance rate: 50%, 10/20)

7. P. Istoan, N. Biri, J. Klein, Issues in Model-Driven Behavioural Product Derivation, In Fifth International Workshop on Variability Modelling of Software-intensive Systems (Vamos 2011), ACM, p. 69-78, Namur, Belgium, 2011 (acceptance rate: 55%, 21/38).

8. B. Morin, J. Klein, O. Barais, J.-M. Jezequel, A Generic Weaver for supporting Product Lines, In Early Aspects Workshop at ICSE, May 12, 2008, Leipzig, Germany, pp 11-18, ACM.

9. J. Klein and J. Kienzle, Reusable Aspect Models, In 11th Workshop on Aspect Oriented Modeling, AOM at Models'07, Nashville, USA, sep 2007.

10. A. Jackson, J. Klein, B. Baudry and S. Clarke, Testing Executable Themes, In Workshop on Models and Aspects - Handling Crosscutting Concerns in MDSD at ECOOP 2006, Nantes, France, Jul 2006.

11. A. Jackson, J. Klein, B. Baudry and S. Clarke, KerTheme: Testing Aspect Oriented Models, In Workshop on Integration of Model Driven Development and Model Driven Testing at EC-MDA, Bilbao, Spain, Jul 2006.

12. Jacques Klein and Jean-Marc Jézéquel, Problems of the Semantic-based Weaving of Scenarios, In Aspects and Software Product Lines: An Early Aspects Workshop at SPLC Europe 2005, Rennes, France, sep 2005.

13. Jacques Klein, Jean-Marc Jézéquel and Noel Plouzeau, Weaving Behavioural Models, In First Workshop on Models and Aspects - Handling Crosscutting Concerns in MDSD at Eccop 05, Glasgow, United Kingdom, Jul 2005.

14. Jacques Klein, Benoit Caillaud, and Loic Hélouët, Merging scenarios , In Formal Methods for Industrial Critical Systems (FMICS), vol. 133, ENTCS, pages 209–226, Linz, Austria, sep 2004 (acceptance rate: 58% 17/29).

15. Jacques Klein and Noel Plouzeau, Transformation of behavioral models based on compositions of sequence diagrams, In Proceedings of Model Driven Architecture: Foundations and Applications 2004 (MDAFA), page 255, Linkoping, Sweden, jun 2004. French Conference Papers

French Conference Papers with program committee

1. Jacques Klein, Benoit Baudry, Olivier Barais, Andrew Jackson, Introduction du test dans la modélisation par aspects, In Proc. of 3ème journées sur l'Ingénierie Dirigée par les Modèles (IDM'07), March 2007. Toulouse, France.

2. Jacques Klein and Franck Fleurey, Tissage d'Aspects Comportementaux, In Proc. of Langages et Modèles à Objets (LMO'06), March 2006. Nimes, France (acceptance rate: 38% 13/34).

Other Publications

1. Alexandre Bartel, Kevin Allix, Jacques Klein, Martin Monperrus, Yves Le Traon: Improving Privacy on Android Smartphones Through In-Vivo Bytecode Instrumentation, technical Report, № ISBN: 978-2-87971-111-9, 2012

2. Alexandre Bartel, Jacques Klein, Martin Monperrus, Yves Le Traon, Automatically Securing Permission-Based Software by Reducing the Attack Surface: An Application to Android, Technical Report, University of Luxembourg and SnT, October 2011.

3. Jacques Klein, Aspects Comportememtaux et Tissage, PhD Thesis, University of Rennes 1, Dec 2006.