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Education

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

Appointments

2010- <i>present</i> :	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
Jan. 2012-:	Assaad Moawad	Adaptive Blurring
Aug. 2013-:	Thomas Hartmann	Smart Grid Cyber-Security AFR Funding
Sept. 2013-:	Li Li	Securing Android Applications FNR CORE Funding
Nov. 2013-:	Jabier Martinez	MDE, Reverse Engineering and SPL UL Structural Position

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
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Assignments of Importances:

- Conference Program Committee Member: NIER@ICSE 2015 (New Ideas and Emergent Results at ICSE), SAM 2014 (System Analysis and Modelling conference), QSIC 2014 (International Conference on Quality Software), NIER@ICSE 2014 (New Ideas and Emergent Results at ICSE), QSIC 2013 (13th International Conference on Quality Software), AOSD/MODULARITY 2013 (12th International Conference on Aspect-Oriented Software Development) , SEAA 2010
- 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)
- Workshop Program Committee Member: VAO 2014, 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'06, SCESM'06
- Member of the University Council as representative of the FSTC's scientific, administrative and technical staff

Major research projects:

- 2014-2017 AndroMap (Static Analysis for Android Security: Building the Map of Android Inter-Application Communication)
FNR Funding, CORE program: 494 k€, **Principal Investigator**
- 2013 **Google Faculty Research Award** (50 k\$ share with Penn 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 (June 2014):

Book Chapters	1	Citations (Google Scholar)	875
Journal Papers	7	h-index (Google Scholar)	15
Conference Papers	22		
Workshop papers	17		
Other publications	6		

Main Research Interests:

Since 2011: Software Security (mainly Android Security) (14 publications)

Since 2003: Model-Driven Engineering, Aspect-Oriented Modeling (26 publications)

Since 2008: Model-Driven Engineering, Software Product Line (11 publications)

Since 2013: Model-Driven Engineering, Model@Run.time (4 publications)

Since 2010: Software Testing (8 publications)

Since 2011: Software Evolution & Dynamic Adaptive Systems (3 publications)

Publications

Articles (referred journals)

1. Christopher Henard, Mike Papadakis, Gilles Perrouin, Jacques Klein, Patrick Heymans, Yves Le Traon, Bypassing the Combinatorial Explosion: Using Similarity to Generate and Prioritize T-wise Test Configurations for Software Product Lines, IEEE Transactions on Software Engineering (TSE), (Accepted for publication on May 20, 2014).
2. Alexandre Bartel, Jacques Klein, Martin Monperrus, Yves Le Traon, Static Analysis for Extracting Permission Checks of a Large Scale Framework: The Challenges And Solutions for Analyzing Android, IEEE Transactions on Software Engineering (TSE), (Accepted for publication on May 2, 2014).
3. Phu Nguyen, Gregory Nain, Jacques Klein, Tejeddine Mouelhi, Yves Le Traon, Modularity and Dynamic Adaptation of Flexibly Secure Systems: Model-Driven Adaptive Delegation in Access Control Management, Transactions on Aspect-Oriented Software Development (TAOSD), Springer, LNCS 8400, 2014, pages 109-144.
4. Gilles Perrouin, Sebastian Oster, Sagar Sen, Jacques Klein, Benoit Baudry, Yves le Traon, Pairwise testing for software product lines: Comparison of two approaches, Software Quality Journal, Springer (SQJ), Volume 20, Sept. 2012, pages 605-643.
5. Tom Mens, Jacques Klein, Evolving Software - Introduction to the Special Theme, ERCIM News, 2012.
6. Jörg Kienzle, Wisam Al Abed, Franck Fleurey, Jean-Marc Jézéquel and Jacques Klein, Aspect-Oriented Design with Reusable Aspect Models, Transactions on Aspect-Oriented Software Development (TAOSD), Springer, LNCS 6210, 2010, pages 272-320.
7. Jacques Klein, Franck Fleurey and Jean-Marc Jézéquel, Weaving Multiple Aspects in Sequence Diagrams, Transactions on Aspect-Oriented Software Development (TAOSD), LNCS 4620, Springer, pages 167-199.

Book Chapters

1. Levi Lucio, Qin Zhang, Phu H. Nguyen, Moussa Amrani, Jacques Klein, Hans Vangheluwe, Yves Le Traon, Advances in Model-Driven Security, Advances in Computers (2014), in Atif Memon (Ed.), Volume 93, p 103-152

International Conferences with program committee

1. Steven Arzt, Siegfried Rasthofer, Christian Fritz, Eric Bodden, Alexandre Bartel, Jacques Klein, Yves le Traon, Damien Outeau, and Patrick McDaniel, FlowDroid: Precise Context, Flow, Field, Object-sensitive and Lifecycle-aware Taint Analysis for Android Apps, ACM SIGPLAN conference on Programming Language Design and Implementation (PLDI 2014), June 2014 (to appear), Edinburgh, UK, (acceptance rate: 18%, 52/287).
2. Thomas Hartmann, Francois Fouquet, Gregory Nain, Brice Morin, Jacques Klein, Olivier Barais, Yves Le Traon, A Native Versioning Concept to Support Historized Models at Runtime, ACM/IEEE 17th International Conference on Model Driven Engineering Languages and Systems (MODELS 2014), Oct. 2014 (to appear), Valencia, Spain, (acceptance rate: 24%, 30/126).

3. Kevin Allix, Quentin Jerome, Tegawendé F. Bissyandé, Jacques Klein, Radu State and Yves Le Traon, A forensic analysis of Android Malware - How is Malware Written and How it Could be Detected?, IEEE Computer Software and Applications Conference (COMPSAC 2014), July 2014 (to appear), Vasteras, Sweden, (acceptance rate: 22%, ?/?).
4. Jabier Martinez, Tewfik Ziadi, Jacques Klein, Yves Le Traon, Identifying and Visualising Commonality and Variability in Model Variants, European Conference on Modelling Foundations and Applications (ECMFA), , July 2014, York, United Kingdom, (acceptance rate: 28%, 14/49).
5. Kevin Allix, Tegawendé F. Bissyandé, Quentin Jérôme, Jacques Klein, Radu State, Yves Le Traon, Large-scale machine learning-based malware detection: confronting the 10-fold cross validation scheme with reality, ACM Conference on Data and Application Security and Privacy (CODASPY), (short paper/poster), March 2014, pages 163-166, San Antonio, TX, USA.
6. Phu Nguyen, Jacques Klein, Max Kramer, Yves Le Traon, A Systematic Review of Model-Driven Security, 20th Asia-Pacific Software Engineering Conference Proceedings (APSEC), IEEE, Dec. 2013, pages 432-441, Bangkok, Thailand.
7. Tegawende F. Bissyandé, David Lo, Lingxiao Jiang, Laurent Reveillere, Jacques Klein, Yves Le Traon, Got Issues? Who Cares About It? A Large Scale Investigation of Issue Trackers from GitHub, 24th International Symposium on Software Reliability Engineering (ISSRE), IEEE, Nov. 2013, pages 188-197, Pasadena, CA, USA, (acceptance rate: 35%, 46/131).
8. Damien Octeau, Patrick McDaniel, Somesh Jha, Alexandre Bartel, Eric Bodden, Jacques Klein, Yves Le Traon, Effective Inter-Component Communication Mapping in Android with Epicc: An Essential Step Towards Holistic Security Analysis, Usenix Security, USENIX Association, August 2013, pages 543-558, Washington D.C., USA, (acceptance rate: 16%, 44/277).
9. Christopher Henard, Mike Papadakis, Gilles Perrouin, Jacques Klein, Yves Le Traon, Multi-objective Test Generation for Software Product Lines, 17th International Software Product Line Conference (SPLC), ACM, August 2013, pages 62-71, Tokyo, Japan, (acceptance rate: 33%, 18/55).
10. M. E. Kramer, J. Klein, J. R. H. Steel, B. Morin, J. Kienzle, O. Barais, and J.-M. Jézéquel, Achieving Practical Genericity in Model Weaving through Extensibility, International Conference on Model Transformation (ICMT), Springer, LNCS 7909, June 2013, pages 108-124, Budapest, Hungary, (acceptance rate: 21%, 12/58).
11. Christopher Henard, Mike Papadakis, Gilles Perrouin, Jacques Klein, Yves Le Traon, Towards Automated Testing and Fixing of Re-engineered Feature Models, International Conference of Software Engineering, New Ideas & Emerging Results Track (NIER@ICSE), IEEE Press, May 2013, pages 1245-1248, San Francisco, USA, (acceptance rate: 22%, 31/143).
12. Phu Nguyen, Gregory Nain, Jacques Klein, Tejjeddine Mouelhi and Yves Le Traon, Model-Driven Adaptive Delegation, 12th International Conference on Aspect Oriented Software Development - AOSD 2013, ACM, March 2013, pages 61-72, Fukuoka, Japan, (acceptance rate: 27%, 17/62).
13. Alexandre Bartel, Jacques Klein, Martin Monperrus, Yves Le Traon, Automatically Securing Permission-Based Software by Reducing the Attack Surface: An Application to Android, IEEE/ACM International Conference on Automated Software Engineering, ASE 2012, ACM, Sept. 2012, pages 274-277 , Essen, Germany, (acceptance rate: 33%, 45/138, 21 long+ 24 short).
14. 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, International Conference of Software Engineering, New Ideas & Emerging Results Track (NIER@ICSE), June 2012, pages 1353-1356, Zurich, Switzerland, (acceptance rate: 18%, 26/147).
15. 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, Seventh European Conference on Modelling Foundations and Applications (ECMFA 2011), June 2011, pages 361-376, Birmingham, UK, (acceptance rate: 36%, 19/53).

16. 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, Third International Conference on Software Testing, Verification and Validation (ICST 2010), IEEE Computer Society, April 2010, pages 459-468, Paris, France, (acceptance rate: 26%, 41/154).
17. Brice Morin, Jacques Klein, Jörg Kienzle and Jean-Marc Jézéquel, Flexible Model Element Introduction Policies for Aspect-Oriented Modeling, 13th ACM/IEEE International Conference on Model Driven Engineering Languages and Systems (MODELS 2010), Springer LNCS 6395, Oct. 2010, pages 63-77, Oslo, Norway, (acceptance rate: 21%, 43/207).
18. Jacques Klein, Jörg Kienzle, Brice Morin, Jean-Marc Jézéquel, Aspect Model Unweaving, 12th ACM/IEEE International Conference on Model Driven Engineering Languages and Systems (MODELS 2009), Springer, LNCS 5795, Oct. 2009, pages 514-530, Denver, Colorado, USA, (acceptance rate: 16%, 34/211).
19. Jörg Kienzle, Wisam Al Abed, Jacques Klein, Aspect-Oriented Multi-View Modeling, 8th International Conference on Aspect Oriented Software Development (AOSD.09), ACM, March 2009, pages 87-98, Charlottesville, Virginia, USA, (acceptance rate: 22%, 19/86).
20. Gilles Perrouin, Jacques Klein, Nicolas Guelfi, Jean-Marc Jézéquel, Reconciling Automation and Flexibility in Product Derivation, 12th International Software Product Line Conference (SPLC 2008), IEEE, Sept. 2008, pages 339-348, Limerick, Ireland, (acceptance rate: 30%, 33/110).
21. Olivier Barais, Jacques Klein, Benoit Baudry, Andrew Jackson, Siobhan Clarke, Composing Multi-View Aspect Models, 7th IEEE International Conference on Composition Based Software Systems (ICCBSS), Feb. 2008, Madrid, Spain.
22. Jacques Klein, Loic Helouet and Jean-Marc Jézéquel, Semantic-based Weaving of Scenarios, 5th International Conference on Aspect Oriented Software Development (AOSD.06), ACM, March 2006, pages 87-98, Bonn, Germany, (acceptance rate: 21%, 20/95).

Peer-Reviewed International Workshop Papers

1. Thomas Hartmann, Francois Fouquet, Jacques Klein, Gregory Nain, Yves Le Traon, Reactive Security for Smart Grids using Models@run.time-Based Simulation and Reasoning, econd Open EIT ICT Labs Workshop on Smart Grid Security, Feb. 2014, Munich, Germany.
2. Phu H. Nguyen, Jacques Klein, Yves Le Traon, Model-Driven Security with A System of Aspect-Oriented Security Design Patterns, 2nd Workshop on View-Based, Aspect-Oriented and Orthographic Software Modelling, July 2014, York, United Kingdom.
3. Christopher Henard, Mike Papadakis, Gilles Perrouin, Jacques Klein, Yves Le Traon, Assessing Software Product Line Testing via Model-based Mutation: An Application to Similarity Testing, th 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), March 2013, Luxembourg, Luxembourg.
4. Alexandre Bartel, Jacques Klein, Martin Monperrus, Yves Le Traon, Dexpler: Converting Android Dalvik Bytecode to Jimple for Static Analysis with Soot, ACM Sigplan International Workshop on the State Of The Art in Java Program Analysis (SOAP), June 2012, Beijing, China.
5. Max Kramer, Jacques Klein, Jim Steel, Building Specifications as a Domain-Specific Aspect Language, Seventh Workshop on Domain-Specific Aspect Languages, DSAL'12@AOSD, March 2012, Postdam, Germany.
6. Paul Istoan, Jacques Klein, Gilles Perrouin, Jean-Marc Jézéquel, A Metamodel-based Classification of Variability Modeling Approaches, VARY International Workshop @MODELS2011, Oct. 2011, New Zealand.
7. Alexandre Bartel, Benoit Baudry, Freddy Munoz, Jacques Klein, Tejeddine Mouelhi and Yves Le Traon, Model Driven Mutation Applied to Adaptative Systems Testing, Mutation 2011 (@ICST), March 2011, pages 408-413, Berlin, Germany, (acceptance rate: 50%, 10/20).
8. Paul Istoan, Nicolas Biri, Jacques Klein, Issues in Model-Driven Behavioural Product Derivation, Fifth International Workshop on Variability Modelling of Software-intensive Systems (Vamos 2011), ACM, 2011, pages 69-78, Namur, Belgium, (acceptance rate: 55%, 21/38).

9. Brice Morin, Jacques Klein, Olivier Barais, Jean-Marc Jezequel, A Generic Weaver for supporting Product Lines, Early Aspects Workshop at ICSE, ACM, May 2008, pages 11-18, Leipzig, Germany.
10. Jacques Klein and Jorg Kienzle, Reusable Aspect Models, 11th Workshop on Aspect Oriented Modeling, AOM at Models'07, Sept. 2007, Nashville, USA.
11. Jacques Klein, Benoit Baudry, Olivier Barais, Andrew Jackson, Introduction du test dans la modélisation par aspects, 3ème journées sur l'Ingénierie Dirigée par les Modèles (IDM'07), March 2007, Toulouse, France.
12. Jacques Klein and Franck Fleurey, Tissage d'Aspects Comportementaux, Langages et Modèles à Objets (LMO'06), March 2006, Nimes, France, (acceptance rate: 38%, 13/34).
13. Andrew Jackson, Jacques Klein, Benoit Baudry and Siobhan Clarke, KerTheme: Testing Aspect Oriented Models, Workshop on Integration of Model Driven Development and Model Driven Testing at EC-MDA, July 2006, Bilbao, Spain.
14. Andrew Jackson, Jacques Klein, Benoit Baudry and Siobhan Clarke, Testing Executable Themes, Workshop on Models and Aspects - Handling Crosscutting Concerns in MDSD at ECOOP 2006, July 2006, Nantes, France.
15. Jacques Klein and Jean-Marc Jézéquel, Problems of the Semantic-based Weaving of Scenarios, Aspects and Software Product Lines: An Early Aspects Workshop at SPLC Europe 2005, Sept. 2005, Rennes, France.
16. Jacques Klein, Jean-Marc Jézéquel and Noel Plouzeau, Weaving Behavioural Models, First Workshop on Models and Aspects - Handling Crosscutting Concerns in MDSD at Eccop 05, July 2005, Glasgow, United Kingdom.
17. Jacques Klein, Benoit Caillaud, and Loic Hélouët, Merging scenarios, Formal Methods for Industrial Critical Systems (FMICS), vol. 133, ENTCS, Sept. 2004, pages 209–226, Linz, Austria, (acceptance rate: 58%, 17/29).

Other Publications

1. Christopher Henard, Mike Papadakis, Gilles Perrouin, Jacques Klein, Yves Le Traon, PLEDGE: A Product Line Editor and Test Generation Tool, Demonstrations and Tools, 17th International Software Product Line Conference (SPLC 2013), August 2013, pages 126-129, Tokyo, Japan.
2. Christian Fritz, Steven Arzt, Siegfried Rasthofer, Eric Bodden, Alexandre Bartel, Jacques Klein, Yves le Traon, Damien Octeau, Patrick McDaniel, Highly Precise Taint Analysis for Android Applications, EC SPRIDE Technical Report TUD-CS-2013-0113, May 2013.
3. Alexandre Bartel, Jacques Klein, Martin Monperrus, Kevin Allix, Yves Le traon, Improving Privacy on Android Smartphones Through In-Vivo Bytecode Instrumentation, Technical Report, N° ISBN: 978-2-87971-111-9, University of Luxembourg, May 2012.
4. 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, Oct. 2011.
5. Jacques Klein, Aspects Comportementaux et Tissage, PhD Thesis, University of Rennes 1, Dec. 2006, Rennes, France.
6. Jacques Klein and Noel Plouzeau, Transformation of behavioral models based on compositions of sequence diagrams, Model Driven Architecture: Foundations and Applications 2004 (MDAFA), June 2004, page 255, Linköping, Sweden.