

Domenico Bianculli

curriculum vitae updated on December 15, 2017

Personal

Date of birth May 10, 1981
Place of birth Marsicovetere (PZ), Italy
Citizenship Italian

Current Position

since 08/2016 **Research Scientist (permanent staff member)**, University of Luxembourg, SnT Centre, Luxembourg, Luxembourg.

Employment History

08/2012 – 07/2016 **Research Associate**, University of Luxembourg, SnT Centre, Luxembourg, Luxembourg.
04/2010 – 07/2012 **Teaching and Research Assistant**, Università della Svizzera italiana, Faculty of Informatics, Lugano, Switzerland.
04/2009 – 03/2010 **Visiting Researcher**, NASA Ames Research Center, Moffett Field, CA, USA.
Scientific Mentors: Dr. Dimitra Giannakopoulou, Dr. Corina Păsăreanu
04/2009 – 03/2010 **Intern**, Mission Critical Technologies Inc., on site at NASA Ames Research Center, Moffett Field, CA, USA.
09/2006 – 03/2009 **Teaching and Research Assistant**, Università della Svizzera italiana, Faculty of Informatics, Lugano, Switzerland.

Education

09/2006 – 07/2012 **PhD, Informatics**, Università della Svizzera italiana, Faculty of Informatics, Lugano, Switzerland.
Advisor: prof. Carlo Ghezzi
PhD Thesis: “*Open-world Software: Specification, Verification, and Beyond*”
03/2007 **Professional Engineer Qualification (Abilitazione alla Professione di Ingegnere)**, Politecnico di Milano, Milano, Italy.
Qualification in Information Technology Engineering (Ingegneria dell’Informazione)
09/2003 – 07/2006 **MSc (Laurea Specialistica DM 509/99), Computing Systems Engineering (Ingegneria Informatica - orientamento Sistemi e Applicazioni dell’Informatica)**, Politecnico di Milano, V School of Engineering (Information Technology Engineering), Milano, Italy.
Final Mark: 110/110 summa cum laude
Advisors: prof. Carlo Ghezzi, ing. Paola Spoletini
Master Thesis: “*A Model Checking Approach to Verify BPEL4WS Workflows*”
09/2000 – 07/2003 **BSc (Laurea DM 509/99), Computer Engineering (Ingegneria Informatica)**, Politecnico di Milano, V School of Engineering (Information Technology Engineering), Milano, Italy.
Final Mark: 110/110 summa cum laude
Advisor: prof. Carlo Ghezzi
Final-year Project: “*PeerSeaPie: a library for nodes discovery in peer-to-peer applications*”
09/1995 – 07/2000 **Scientific High School Degree (Diploma di Maturità Scientifica)**, Liceo Scientifico Statale “G. Peano”, Marsiconuovo (PZ), Italy.
Final Mark: 100/100
Specialization in foreign languages

Additional Education

- 10/2011 – 12/2011 **“Venture Challenge” entrepreneurship course**, *Venturelab @ Università della Svizzera italiana*, Lugano, Switzerland.
- 09/2008 **GLOBAN Summer School - “The Global Computing Approach to Analysis of Systems”**, *Warsaw, Poland*.
- 07/2007 **USI-CMU Summer School on Dependable Computer Systems**, *Lugano, Switzerland*.

Publications

Journal Papers

- J1 Julian Thomé, Lwin Khin Shar, Domenico Bianculli, and Lionel Briand. Security slicing for auditing common injection vulnerabilities. *Journal of Systems and Software*, 2017.
- J2 Ameni Ben Fadhel, Domenico Bianculli, and Lionel Briand. A comprehensive modeling framework for role-based access control policies. *Journal of Systems and Software*, 107:110–126, September 2015.
- J3 Domenico Bianculli, Antonio Filieri, Carlo Ghezzi, and Dino Mandrioli. Syntactic-semantic incrementality for agile verification. *Science of Computer Programming*, 97, part 1(0):47–54, January 2015.
- J4 Luciano Baresi, Domenico Bianculli, Carlo Ghezzi, Sam Guinea, and Paola Spoletini. Validation of web service compositions. *IET Softw.*, 1(6):219–232, December 2007.

Conference Papers

- C1 Wei Dou, Domenico Bianculli, and Lionel Briand. A model-driven approach to trace checking of pattern-based temporal properties. In *Proceedings of the 2017 ACM/IEEE 20th International Conference on Model Driven Engineering Languages and Systems (MODELS 2017)*, Austin, TX, USA. IEEE, September 2017. Acceptance rate: 28% (24/85).
- C2 Julian Thomé, Lwin Khin Shar, Domenico Bianculli, and Lionel Briand. Search-driven string constraint solving for vulnerability detection. In *Proceedings of the 39th International Conference on Software Engineering (ICSE 2017)*, Buenos Aires, Argentina, pages 198–208. ACM, May 2017. Acceptance rate: 16% (68/415).
- C3 Ameni Ben Fadhel, Domenico Bianculli, and Lionel Briand. Gemrbac-dsl: a high-level specification language for role-based access control policies. In *Proceedings of the 21st ACM Symposium on Access Control Models and Technologies (SACMAT 2016)*, Shanghai, China, pages 179–190. ACM, June 2016.
- C4 Lionel Briand, Shiva Nejati, Mehrdad Sabetzadeh, and Domenico Bianculli. Testing the untestable. In *Proceedings of the 38th International Conference on Software Engineering Companion (ICSE 2016)*, Austin, TX, USA, pages 789–792. ACM, May 2016. Acceptance rate (Visions of 2025 and Beyond track): 47% (9/19).
- C5 Marcello Maria Bersani, Domenico Bianculli, Carlo Ghezzi, Srđan Krstić, and Pierluigi San Pietro. Efficient large-scale trace checking using MapReduce. In *Proceedings of the 38th International Conference on Software Engineering (ICSE 2016)*, Austin, TX, USA, pages 888–898. ACM, May 2016. **ACM SIGSOFT Distinguished Paper Award**. Acceptance rate: 19% (101/530).
- C6 Ameni Ben Fadhel, Domenico Bianculli, Lionel Briand, and Benjamin Hourte. A model-driven approach to representing and checking RBAC contextual policies. In *Proceedings of the 6th ACM Conference on Data and Application Security and Privacy (CODASPY 2016)*, New Orleans, LA, USA, pages 243–253. ACM, March 2016. Acceptance rate: 19% (22/115).
- C7 Domenico Bianculli, Carlo Ghezzi, Srđan Krstić, and Pierluigi San Pietro. Offline trace checking of quantitative properties of service-based applications. In *Proceedings of the 7th International Conference on Service Oriented Computing and Application (SOCA 2014)*, Matsue, Japan, pages 9–16. IEEE, November 2014. Acceptance rate: 26% (14/54).
- C8 Domenico Bianculli, Antonio Filieri, Carlo Ghezzi, and Dino Mandrioli. Incremental syntactic-semantic reliability analysis of evolving structured workflows. In *Proceedings of the 6th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation*

(ISoLA 2014), Corfu, Greece, volume 8802 of *Lecture Notes in Computer Science*, pages 41–55. Springer, October 2014.

- C9 Wei Dou, Domenico Bianculli, and Lionel Briand. Revisiting model-driven engineering for runtime verification of business processes. In *Proceedings of the 8th System Analysis and Modeling Conference (SAM 2014), Valencia, Spain*, volume 8769 of *Lecture Notes in Computer Science*, pages 190–197. Springer, September 2014.
- C10 Domenico Bianculli, Carlo Ghezzi, and Srđan Krstić. Trace checking of metric temporal logic with aggregating modalities using MapReduce. In *Proceedings of the 12th International Conference on Software Engineering and Formal Methods (SEFM 2014), Grenoble, France*, volume 8702 of *Lecture Notes in Computer Science*, pages 144–158. Springer, September 2014. Acceptance rate: 27% (29/106).
- C11 Wei Dou, Domenico Bianculli, and Lionel Briand. OCLR: a more expressive, pattern-based temporal extension of OCL. In *Proceedings of the 2014 European Conference on Modelling Foundations and Applications (ECMFA 2014), York, United Kingdom*, volume 8569 of *Lecture Notes in Computer Science*, pages 51–66. Springer, July 2014. Acceptance rate: 28.5% (14/49).
- C12 Marcello Maria Bersani, Domenico Bianculli, Carlo Ghezzi, Srđan Krstić, and Pierluigi San Pietro. SMT-based checking of SOLOIST over sparse traces. In *Proceedings of the 17th International Conference on Fundamental Approaches to Software Engineering (FASE 2014), Grenoble, France*, volume 8411 of *Lecture Notes in Computer Science*, pages 276–290. Springer, April 2014. **Nomination for the best paper award.** Acceptance rate: 22.4% (28/125).
- C13 Domenico Bianculli, Carlo Ghezzi, and Pierluigi San Pietro. The tale of SOLOIST: a specification language for service compositions interactions. In *Proceedings of the 9th International Symposium on Formal Aspects of Component Software (FACS'12), Mountain View, CA, USA*, volume 7684 of *Lecture Notes in Computer Science*, pages 55–72. Springer, September 2012. Acceptance rate: 40% (16/40).
- C14 Domenico Bianculli, Carlo Ghezzi, Cesare Pautasso, and Patrick Senti. Specification patterns from research to industry: a case study in service-based applications. In *Proceedings of the 34th International Conference on Software Engineering (ICSE 2012), Zürich, Switzerland*, pages 968–976. IEEE Computer Society Press, June 2012. SEiP track acceptance rate: 18.5% (20/108).
- C15 Domenico Bianculli, Dimitra Giannakopoulou, and Corina S. Păsăreanu. Interface decomposition for service compositions. In *Proceedings of the 33rd International Conference on Software Engineering (ICSE 2011), Honolulu, HI, USA*, pages 501–510. ACM, May 2011. Acceptance rate: 14% (62/441).
- C16 Domenico Bianculli, Walter Binder, and Mauro Luigi Drago. Automated performance assessment for service-oriented middleware: a case study on BPEL engines. In *Proceedings of the 19th International Conference on World Wide Web (WWW 2010), Raleigh, NC, USA*, pages 141–150. ACM, April 2010. Acceptance rate: 14% (104/743).
- C17 Luciano Baresi, Domenico Bianculli, Sam Guinea, and Paola Spoletini. Keep it small, keep it real: Efficient run-time verification of web service compositions. In *Proceedings of IFIP international conference on Formal Techniques for Distributed Systems (FMOODS/FORTE 2009), Lisbon Portugal*, volume 5522 of *Lecture Notes in Computer Science*, pages 26–40. Springer, June 2009. Acceptance rate: 28.5% (12/42).
- C18 Domenico Bianculli, Walter Binder, Luigi Drago, and Carlo Ghezzi. Transparent reputation management for composite web services. In *Proceedings of the IEEE International Conference on Web Services (ICWS 2008), Beijing, China*, pages 621–628. IEEE Computer Society Press, September 2008. Acceptance rate: 18%.
- C19 Domenico Bianculli, Radu Jurca, Walter Binder, Carlo Ghezzi, and Boi Faltings. Automated dynamic maintenance of composite services based on service reputation. In *Proceedings of ICSOC'07, International Conference on Service-Oriented Computing, Vienna, Austria*, volume 4749 of *Lecture Notes in Computer Science*, pages 449–455. Springer, September 2007. Acceptance rate: 31.6% ((30+14)/139).

- C20 Luciano Baresi, Domenico Bianculli, Carlo Ghezzi, Sam Guinea, and Paola Spoletini. A timed extension of WSCoL. In *Proceedings of the IEEE International Conference on Web Services (ICWS 2007)*, Salt Lake City, UT, USA, pages 663–670. IEEE Computer Society Press, July 2007. Acceptance rate: N/A.
- C21 Domenico Bianculli, Carlo Ghezzi, and Paola Spoletini. A model checking approach to verify BPEL4WS workflows. In *Proceedings of the 2007 IEEE International Conference on Service-Oriented Computing and Applications (IEEE SOCA 2007)*, Newport Beach, CA, USA, pages 13–20. IEEE Computer Society Press, June 2007. Acceptance rate: 48.4% (31/64).
- C22 Domenico Bianculli, Paola Spoletini, Angelo Morzenti, Matteo Pradella, and Pierluigi San Pietro. Model checking temporal metric specification with Trio2Promela. In *Proceedings of International Symposium on Fundamentals of Software Engineering (FSEN 2007)*, Teheran, Iran, volume 4767 of *Lecture Notes in Computer Science*, pages 388–395. Springer, April 2007. Acceptance rate: 45.2% ((24+9)/73).

Book Chapters

- BC1 Luciano Baresi, Domenico Bianculli, and Sam Guinea. Cloud-based systems need multi-level management. In Athman Bouguettaya, Michael Sheng, and Florian Daniel, editors, *Advanced Web Services*, pages 579–603. Springer, 2013.
- BC2 Domenico Bianculli, Carlo Ghezzi, Paola Spoletini, Luciano Baresi, and Sam Guinea. A guided tour through SAVVY-WS: a methodology for specifying and validating web service compositions. In Egon Börger and Antonio Cisternino, editors, *Advances in Software Engineering*, volume 5316 of *Lecture Notes in Computer Science*, pages 131–160. Springer, November 2008.

Workshop Papers

- WS1 Domenico Bianculli and Srđan Krstić. On the risk of tool over-tuning in runtime verification competitions. In *Proceedings of the International Workshop on Competitions, Usability, Benchmarks, Evaluation, and Standardisation for Runtime Verification Tools (RV-CuBES 2017)*, co-located with RV 2017, Seattle, WA, USA, volume 3 of *Kalpa Publications in Computing*, pages 37–40. EasyChair, September 2017.
- WS2 Wei Dou, Domenico Bianculli, and Lionel Briand. TempPsy-Check: a tool for model-driven trace checking of pattern-based temporal properties. In *Proceedings of the International Workshop on Competitions, Usability, Benchmarks, Evaluation, and Standardisation for Runtime Verification Tools (RV-CuBES 2017)*, co-located with RV 2017, Seattle, WA, USA, volume 3 of *Kalpa Publications in Computing*, pages 64–70, September 2017.
- WS3 Domenico Bianculli, Antonio Filieri, Carlo Ghezzi, Dino Mandrioli, and Alessandro Maria Rizzi. Syntax-driven program verification of matching logic properties. In *Proceedings of the 3rd FME Workshop on Formal Methods in Software Engineering (FormaliSE 2015)*, co-located with ICSE 2015, Florence, Italy. IEEE, May 2015.
- WS4 Marcello Maria Bersani, Domenico Bianculli, Schahram Dustdar, Alessio Gambi, Carlo Ghezzi, and Srđan Krstić. Towards the formalization of properties of cloud-based elastic systems. In *Proceedings of the 6th International Workshop on Principles of Engineering Service-oriented Systems (PESOS 2014)*, co-located with ICSE 2014, Hyderabad, India. ACM, June 2014.
- WS5 Domenico Bianculli, Carlo Ghezzi, and Cesare Pautasso. Embedding continuous lifelong verification in service life cycles. In *Proceedings of Principles of Engineering Service Oriented Systems (PESOS 2009)*, co-located with ICSE 2009, Vancouver, Canada, pages 99–102. IEEE Computer Society Press, May 2009.
- WS6 Domenico Bianculli. Lifelong verification of dynamic service compositions. In *Proceedings of the 2008 Foundations of Software Engineering Doctoral Symposium (FSEDS '08)*, co-located with ACM SIGSOFT 2008/FSE 16, Atlanta, USA, pages 1–4. ACM, November 2008.
- WS7 Domenico Bianculli and Carlo Ghezzi. SAVVY-WS at a glance: supporting verifiable dynamic service compositions. In *Proceedings of the 1st International Workshop on Automated engineering of Autonomous and run-tiMe evolVing Systems (ARAMIS 2008)*, co-located with ASE 2008, L'Aquila, Italy, pages 49–56. IEEE Computer Society Press, September 2008.
- WS8 Domenico Bianculli and Carlo Ghezzi. Towards a methodology for lifelong validation of service compositions. In *Proceedings of the 2nd International Workshop on Systems Development in SOA*

Environments (SDSOA 2008), co-located with ICSE 2008, Leipzig, Germany, pages 7–12. ACM, May 2008.

- WS9 Domenico Bianculli and Carlo Ghezzi. Monitoring conversational web services. In *Proceedings of the 2nd International Workshop on Service-Oriented Software Engineering (IW-SOSWE'07), co-located with ESEC/FSE 2007, Dubrovnik, Croatia*, pages 15–21. ACM, September 2007.

Demonstration Papers and Posters

- DM1 Julian Thomé, Lwin Khin Shar, Domenico Bianculli, and Lionel Briand. JoanAudit: A tool for auditing common injection vulnerabilities. In *Proceedings of the 2017 11th Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering, Paderborn, Germany*, pages 1004–1008. ACM, September 2017. Acceptance rate: 46% (12/26).
- DM2 Domenico Bianculli, Walter Binder, and Mauro Luigi Drago. SOABench: Performance evaluation of service-oriented middleware made easy. In *Proceedings (Volume 2) of the 32nd International Conference on Software Engineering (ICSE 2010), Cape Town, South Africa*, pages 301–302. ACM, May 2010. Informal Research Demo. Acceptance rate: N/A.
- DM3 Domenico Bianculli, Walter Binder, Luigi Drago, and Carlo Ghezzi. ReMan: A pro-active reputation management infrastructure for composite web services. In *Proceedings of the 31st International Conference on Software Engineering (ICSE 2009), Vancouver, Canada*, pages 623–626. IEEE Computer Society Press, May 2009. Formal Research Demo. Acceptance rate: 33.3% (24/72).
- DM4 Domenico Bianculli, Angelo Morzenti, Matteo Pradella, and Pierluigi San Pietro and Paola Spolemini. Trio2Promela: a model checker for temporal metric specifications. In *ICSE 2007 Companion: Companion of the proceedings of the 29th International Conference on Software Engineering, Minneapolis, MN, USA*, pages 61–62. IEEE Computer Society Press, May 2007. Informal Research Demo. Acceptance rate: 50% ((12+16)/56).

Edited Proceedings

- PR1 Domenico Bianculli, Radu Calinescu, and Bernhard Rumpe, editors. *Software Engineering and Formal Methods - SEFM 2015 Collocated Workshops: ATSE, HOFM, MoKMaSD, and VERY*SCART, York, UK, September 7-8, 2015, Revised Selected Papers*, volume 9509 of *Lecture Notes in Computer Science*. Springer, 2015.
- PR2 Domenico Bianculli, Sam Guinea, Sylvain Hallé, and Andrea Polini, editors. *QASBA 2013: Proceedings of the 2013 International Workshop on Quality Assurance for Service-Based Applications*. ACM, July 2013.
- PR3 Domenico Bianculli, Patricia Lago, Grace A. Lewis, and Hye-Young Paik, editors. *Proceedings of 2013 5th International Workshop on Principles of Engineering Service-Oriented Systems (PESOS)*. IEEE, May 2013.
- PR4 Domenico Bianculli, Sam Guinea, Andreas Metzger, and Andrea Polini, editors. *QASBA '11: Proceedings of the International Workshop on Quality Assurance for Service-Based Applications*. ACM, September 2011.

Technical Reports

- TR1 Ameni Ben Fadhel, Domenico Bianculli, and Lionel Briand. GemRBAC-DSL: a high-level specification language for role-based access control policies. Technical Report TR-SnT-2016-4, SnT Centre - University of Luxembourg, April 2016.
- TR2 Ameni Ben Fadhel, Domenico Bianculli, and Lionel Briand. A comprehensive modeling framework for role-based access control policies. Technical Report TR-SnT-2014-15, SnT Centre - University of Luxembourg, November 2014.
- TR3 Wei Dou, Domenico Bianculli, and Lionel Briand. A model-driven approach to offline trace checking of temporal properties with OCL. Technical Report TR-SnT-2014-5, SnT Centre - University of Luxembourg, September 2014.
- TR4 Wei Dou, Domenico Bianculli, and Lionel Briand. OCLR: a more expressive, pattern-based temporal extension of OCL. Technical Report TR-SnT-2014-2, SnT Centre - University of Luxembourg, February 2014.

- TR5 Domenico Bianculli, Carlo Ghezzi, Srđan Krstić, and Pierluigi San Pietro. From SOLOIST to CLTLB(2): Checking quantitative properties of service-based applications. Technical Report 2013.26, Politecnico di Milano - Dipartimento di Elettronica, Informazione e Bioingegneria, October 2013.
- TR6 Domenico Bianculli, Antonio Filieri, Carlo Ghezzi, and Dino Mandrioli. A syntactic-semantic approach to incremental verification. *CoRR*, abs/1304.8034, May 2013.
- TR7 Domenico Bianculli, Walter Binder, and Mauro Luigi Drago. Automated performance assessment for service-oriented middleware. Technical Report 2009/07, Faculty of Informatics - University of Lugano, November 2009.
- TR8 Luciano Baresi, Domenico Bianculli, Sam Guinea, and Paola Spoletini. Keep it small, keep it real: Efficient run-time verification of web service compositions. Technical Report 2009.9, Politecnico di Milano - Dipartimento di Elettronica e Informazione, April 2009.

Other

- O1 Lionel Briand, Domenico Bianculli, Shiva Nejati, Fabrizio Pastore, and Mehrdad Sabetzadeh. The case for context-driven software engineering research. *IEEE Sw.*, 34(5):72–75, 2017.
- O2 Domenico Bianculli, Carlo Ghezzi, Cesare Pautasso, and Patrick Senti. Specification patterns from research to industry: a case study in service-based applications (extended abstract). In *Proceedings of Software Engineering 2014: Fachtagung des GI-Fachbereichs Softwaretechnik, Kiel, Germany*, volume 227 of *Lecture Notes in Informatics*, pages 51–52. GI, February 2014.
- O3 Domenico Bianculli, Patricia Lago, Grace A. Lewis, and Hye-Young Paik. 5th international workshop on principles of engineering service-oriented systems (PESOS 2013). In *Proceedings of the 2013 International Conference on Software Engineering (ICSE '13), San Francisco, CA, USA*, pages 1539–1540. IEEE Press, May 2013.
- O4 Patricia Lago, Grace A. Lewis, Andreas Metzger, Vladimir Tomic, Domenico Bianculli, Antinisca Di Marco, Andrea Polini, and Pierluigi Plebani. Report of the 4th international workshop on principles of engineering service-oriented systems (PESOS 2012): internet of services and the quest for case studies. *SIGSOFT Softw. Eng. Notes*, 38(1):35–38, January 2013.
- O5 Domenico Bianculli, Mehdi Jazayeri, and Mauro Pezzè, editors. *Matinée with Carlo Ghezzi - from Programming Languages to Software Engineering*. CreateSpace, June 2012.

Supervised Students

Current PhD Students

- 01/2017 – present Chaima Boufaied, University of Luxembourg, Luxembourg, co-advised with Lionel Briand.
- 09/2016 – present Salma Messaoudi, University of Luxembourg, Luxembourg, co-advised with Lionel Briand and Annibale Panichella.
- 07/2015 – present Julian Thomé, University of Luxembourg, Luxembourg, co-advised with Lionel Briand and Lwin Khin Shar.

Former PhD Students

- 10/2013 – 09/2017 Ameni Ben Fadhel, “Comprehensive Specification and Efficient Enforcement of Role-based Access Control Policies using a Model-driven Approach”, University of Luxembourg, Luxembourg, co-advised with Lionel Briand.
- 10/2013 – 10/2016 Alessandro Maria Rizzi, “A syntactic-semantic approach for incremental program verification of matching logic properties”, Politecnico di Milano, Italy, co-advised with Carlo Ghezzi, Antonio Filieri, and Dino Mandrioli.
- 11/2012 – 10/2016 Wei Dou, “A Model-driven Approach to Offline Trace Checking of Temporal Properties”, University of Luxembourg, Luxembourg, co-advised with Lionel Briand.
- 01/2013 – 12/2015 Srđan Krstić, “Trace Checking of Quantitative Properties”, Politecnico di Milano, Italy, co-advised with Carlo Ghezzi and Pierluigi San Pietro.

Former MSc Students (Master Thesis)

- Spring 2013, Fall 2013 Alessandro Maria Rizzi, “Incremental Reachability Checking of KernelC Programs using Matching Logic”, Politecnico di Milano, Italy, co-advised with Carlo Ghezzi and Antonio Filieri.

- Spring 2012, Fall 2012 Srđan Krstić, “Verification of quantitative properties of service-based applications” Politecnico di Milano, Italy, co-advised with Carlo Ghezzi.
- Fall 2007, Spring 2008 Mauro Luigi Drago, “Transparent reputation management for composite web services” Politecnico di Milano, Italy, co-advised with Carlo Ghezzi.

Research Grants Acquisition

- 01/2018–12/2020 **“LISTENER: Log-driven, Search-based Test Generation for Ground Control Systems”**, *Principal Investigator: Lionel Briand*, funded by Fonds National de la Recherche Luxembourg under the CORE PPP scheme (Industry Partnership with SES TechCom).
Role: Co-PI
Amount: EUR 371 000
- 01/2017 – 12/2019 **“MOVIDA: Model-driven Trace Checking of Quantitative Properties using Big Data Technologies”**, *Principal Investigator: Mehrdad Sabetzadeh*, funded by the University of Luxembourg.
Role: Co-PI
Amount: EUR 163 000
- 09/2016 – 08/2021 **“TUNE: Testing the Untestable”**, *Principal Investigator: Lionel Briand*, funded by the European Research Council under the ERC Advanced Grant programme.
Role: Technical contributor to the proposal
Amount: EUR 2 307 932
- 04/2009 – 03/2010 **PBTIP2-125604 - “Lifelong Verification of Dynamic Service Compositions”**, *Principal Investigator*, funded by the Swiss National Science Foundation (SNF) under the program for fellowships for prospective researchers.
Supported a research visit at the NASA Ames Research Center
Amount: CHF 44 950

Participation in Research Projects

- 10/2016 – present **“Search-based Integration Testing for Ground Control Systems”**, *University of Luxembourg*, industry-partnered project with SES TechCom.
Technical contributor and Industry Partner Manager (PI: prof. Lionel Briand)
- 01/2016 – present **INTER/DFG/14/11092585 - “CRC1223 - Methods and Tools for Understanding and Controlling Privacy”**, *University of Luxembourg*, funded by Fonds National de la Recherche Luxembourg.
Lead Scientist (PI: prof. Lionel Briand)
- 11/2013 – 09/2017 **“Model-driven Run-time Verification of RBAC policies”**, *University of Luxembourg*, industry-partnered project with HITEC Luxembourg.
Lead Scientist and Industry Partner Manager (PI: prof. Lionel Briand)
- 04/2013 – 10/2016 **“Model-driven Run-time Verification of eGovernment business processes”**, *University of Luxembourg*, industry-partnered project with CTIE Luxembourg.
Lead Scientist and Industry Partner Manager (PI: prof. Lionel Briand)
- 04/2011 – 07/2012 **SNF 135051 CLAVOS - “Continuous Lifelong Analysis and Verification of Open Services”**, *Università della Svizzera italiana*, funded by the Swiss National Science Foundation.
Technical Contributor (project leaders: prof. Carlo Ghezzi, prof. Cesare Pautasso)
- 02/2010 – 03/2012 **EU-FP7-215483 S-Cube - “European Network of Excellence in Software Services and Systems”**, *Università della Svizzera italiana (Associate Member)*, funded by the European Union.
Technical Contributor (local project coordinators: prof. Mehdi Jazayeri, prof. Cesare Pautasso)
- 04/2009 – 03/2011 **SNF 125337 CLAVOS - “Continuous Lifelong Analysis and Verification of Open Services”**, *Università della Svizzera italiana*, funded by the Swiss National Science Foundation.
Technical Contributor (project leaders: prof. Carlo Ghezzi, prof. Cesare Pautasso)
- 09/2006 – 07/2008 **IST-FP6-026995 PLASTIC - “Providing Lightweight and Adaptable Service Technology for Pervasive Information and Communication”**, *Università della Svizzera italiana*, funded by the European Union.
Technical Contributor (local project coordinators: prof. Antonio Carzaniga, prof. Alexander L. Wolf)

Teaching Activities

- Fall 2010 **Teaching Assistant**, *Università della Svizzera italiana*, Lugano, Switzerland.
Programming Languages (graduate level, 6 ECTS). Instructor: prof. Mehdi Jazayeri

- Spring 2009 **Teaching Assistant**, *Università della Svizzera italiana*, Lugano, Switzerland.
Automata and Formal Languages (undergraduate level, 3 ECTS). Instructor: prof. Jürg Nievergelt
- Fall 2008 **Teaching Assistant**, *Università della Svizzera italiana*, Lugano, Switzerland.
Programming Languages (graduate level, 6 ECTS). Instructor: prof. Mehdi Jazayeri
- August 2008 **Teaching Assistant**, *Università della Svizzera italiana*, Lugano, Switzerland.
Remixing the web: Fundamentals of Mashup Development
Course taught to high-school students as part of the Swiss initiative “Informatica ’08”
- Spring 2008 **Teaching Assistant**, *Università della Svizzera italiana*, Lugano, Switzerland.
Automata and Formal Languages (undergraduate level, 3 ECTS). Instructor: prof. Laura Pozzi
- Fall 2007 **Teaching Assistant**, *Università della Svizzera italiana*, Lugano, Switzerland.
Programming Languages (graduate level, 6 ECTS). Instructor: prof. Mehdi Jazayeri
- Spring 2007 **Teaching Assistant**, *Università della Svizzera italiana*, Lugano, Switzerland.
Automata and Formal Languages (undergraduate level, 3 ECTS). Instructor: prof. Laura Pozzi
Software Design (undergraduate level, 6 ECTS). Instructor: prof. Walter Binder
- Fall 2006 **Teaching Assistant**, *Università della Svizzera italiana*, Lugano, Switzerland.
Introduction to Programming in C (undergraduate level, 2 ECTS). Instructor: prof. Antonio Carzaniga
Hardware-Software Codesign (undergraduate level, 6 ECTS). Instructor: prof. Laura Pozzi
- Spring 2006 **Programming Lab Tutor**, *Politecnico di Milano*, Milano, Italy.
Software Engineering. Instructor: prof. Luciano Baresi
- Fall 2005 **Programming Lab Tutor**, *Politecnico di Milano*, Milano, Italy.
Computer Science B. Instructor: ing. Paola Spoletini

Awards

- Outstanding Reviewer Award at the 39th International Conference on Software Engineering (ICSE 2017)
- ACM SIGSOFT Distinguished Paper Award at the 38th International Conference on Software Engineering (ICSE 2016)
- Best Reviewer Award at WICSA and CompArch 2016
- Best Reviewer Award at the 10th joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE 2015)
- Best Paper Award Nomination at the 17th International Conference on Fundamental Approaches to Software Engineering (FASE 2014), part of ETAPS.

Professional Service

Chairmanship

- Program co-chair, Doctoral Symposium of the 10th Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE 2015)
- Program co-chair, 5th International Workshop on Principles of Engineering Service-Oriented Systems (PESOS 2013)
- Program co-chair, 2nd International Workshop on Quality Assurance for Service-based Applications (QASBA 2013)
- Evaluation committee co-chair, special session on “The Quest for Case Studies” at the 4th International Workshop on Principles of Engineering Service-Oriented Systems (PESOS 2012)
- Program co-chair, 1st International Workshop on Quality Assurance for Service-based Applications (QASBA 2011)

Program Committee Membership

- 33rd IEEE/ACM International Conference on Automated Software Engineering (ASE 2018)
- 2018 International Conference on Formal Methods in Software Engineering (FormaliSE 2018)
- 14th International Conference on integrated Formal Methods (iFM 2018)
- Software Verification and Testing track (SVT) at the 33rd ACM/SIGAPP Symposium On Applied Computing (SAC 2018)
- 10th Central European Workshop on Services and their Composition (ZEUS 2018)

- International Conference on Software Architecture (ICSA 2017)
- 39th International Conference on Software Engineering (ICSE 2017)
- ACM Student Research Competition at the 39th International Conference on Software Engineering (ICSE 2017)
- Technical Briefings track at the 39th International Conference on Software Engineering (ICSE 2017)
- 15th International Conference on Service Oriented Computing (ICSOC 2017)
- 17th International Workshop in OCL and Textual Modeling (OCL 2017)
- International Workshop on Competitions, Usability, Benchmarks, Evaluation, and Standardisation for Runtime Verification Tools (RV-CuBES 2017)
- 9th Central European Workshop on Services and their Composition (ZEUS 2017)
- 14th International Conference on Service Oriented Computing (ICSOC 2016)
- 16th International Conference on Web Engineering (ICWE 2016)
- Doctoral Symposium of the ACM/IEEE 19th International Conference on Model Driven Engineering Languages and Systems (MODELS 2016)
- 16th International Workshop in OCL and Textual Modeling (OCL 2016)
- 23rd IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER 2016)
- Student Contest on Software Engineering at ICSE 2016 (SCORE 2016)
- WICSA and CompArch 2016
- 18th International ACM SIGSOFT Symposium on Component-Based Software Engineering (CBSE 2015)
- 10th joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE 2015)
- 8th International Workshop on Evolutionary Business Processes (EVL-BP 2015)
- 13th International Conference on Service Oriented Computing (ICSOC 2015)
- 15th International Conference on Web Engineering (ICWE 2015)
- 7th International Workshop on Principles of Engineering Service-Oriented and Cloud Systems (PESOS 2015)
- 1st International Workshop on the ART of Software Composition (SCART 2015)
- Italian Student Contest on Software Engineering at ICSE 2015 (SCORE-it 2015)
- 13th International Conference on Software Engineering and Formal Methods (SEFM 2015)
- Testing: Academic and Industrial Conference - Practice and Research Techniques (TAIC PART 2015)
- 17th International ACM SIGSOFT Symposium on Component-Based Software Engineering (CBSE 2014)
- 7th International Workshop on Evolutionary Business Processes (EVL-BP 2014)
- Tutorials and Technical Briefings track at the 36th International Conference on Software Engineering (ICSE 2014)
- 12th International Conference on Service Oriented Computing (ICSOC 2014)
- First International Workshop on Service Orchestration and Choreography for the Future Internet (OrChor 2014)
- 6th International Workshop on Principles of Engineering Service-Oriented and Cloud Systems (PESOS 2014)
- 12th International Conference on Software Engineering and Formal Methods (SEFM 2014)
- 16th International ACM SIGSOFT Symposium on Component-Based Software Engineering (CBSE 2013)
- Tool demo track at the 9th joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE 2013)
- 6th International Workshop on Evolutionary Business Processes (EVL-BP 2013)
- International Conference on Software Composition 2013 (SC 2013)
- Student Contest on Software Engineering at ICSE 2013 (SCORE 2013)
- 5th International Workshop on Evolutionary Business Processes (EVL-BP 2012)

- 17th IEEE International Conference on Engineering of Complex Computer Systems (ICECCS 2012)
- 7th Workshop on Enhanced Web Service Technologies (WEWST 2012)
- 4th International Workshop on Monitoring, Adaptation and Beyond (MONA+ 2011)
- 4th International Workshop on Evolutionary Business Processes (EVL-BP 2011)
- 6th Workshop on Enhanced Web Service Technologies (WEWST 2011)
- 3rd International Workshop on Dynamic and Declarative Business Processes (DDBP 2010)
- 2nd International Workshop on Dynamic and Declarative Business Processes (DDBP 2009)
- 1st International Workshop on Dynamic and Declarative Business Processes (DDBP 2008)

Reviewer Service

- Communications of ACM (CACM), 2016
- Springer Computing (COMP), 2012
- Springer Formal Aspects of Computing (FAOC), 2011
- Special Issue of the International Journal of Business Process Integration and Management (IJBPIM) on Dynamic and Declarative Business Processes, 2008
- Elsevier Information and Software Technology (IST), 2009, 2010, 2014
- IOS Press Journal of Computer Security (JCS), 2012
- Special Issue of Journal of Research and Practice in Information Technology (JRPIT) on Dynamic and Declarative Business Processes, 2009
- Elsevier Journal of Systems and Software (JSS), 2011, 2013, 2015
- Springer Service-oriented Computing and Applications (SOCA), 2010, 2013
- IEEE Software, 2011, 2014, 2015
- Springer Software and Systems Modeling, 2014
- ACM Transactions on Autonomous and Adaptive Systems (TAAS), 2014
- ACM Transactions on Software Engineering and Methodology (TOSEM), 2008, 2014, 2015, 2016, 2017
- IEEE Transactions on Service Computing (TSC), 2014
- IEEE Transactions on Dependable and Secure Computing (TDSC), 2017
- IEEE Transactions on Software Engineering (TSE), 2010, 2013, 2014, 2015, 2016

Conference/Workshop Organization

- Co-located Events chair, 39th International Conference on Software Engineering (ICSE 2017)
- Publicity co-chair, 16th International Conference on Web Engineering (ICWE 2016)
- Publicity co-chair, 37th International Conference on Software Engineering (ICSE 2015)
- Workshops chair, 13th International Conference on Software Engineering and Formal Methods (SEFM 2015)
- Publicity co-chair, 11th International Conference on Service Oriented Computing (ICSOC 2013)
- Co-organizer, 5th International Workshop on Principles of Engineering Service-Oriented Systems (PESOS 2013)
- Co-organizer, 2nd International Workshop on Quality Assurance for Service-based Applications (QASBA 2013)
- Co-organizer, special session on “The Quest for Case Studies” at the 4th International Workshop on Principles of Engineering Service-Oriented Systems (PESOS 2012)
- Co-organizer, 1st International Workshop on Quality Assurance for Service-based Applications (QASBA 2011)
- Local Arrangements, NASA Formal Methods Symposium (NFM 2009)
- Webmaster, International Workshop on the Engineering of Software Services for Pervasive Environments (ESSPE'07)

External Referee Service

- 1st IEEE European Symposium on Security and Privacy (EuroS&P 2016)
- 17th IEEE International Symposium on High Assurance Systems Engineering (HASE 2016)
- ACM/IEEE 19th International Conference on Model Driven Engineering Languages and Systems (MODELS 2016)

- 36th International Conference on Software Engineering (ICSE 2014)
- 20th Asia-Pacific Software Engineering Conference (APSEC 2013)
- 11th International Conference on Service Oriented Computing (ICSOC 2013)
- 2013 International Symposium in Software Testing and Analysis (ISSTA 2013)
- 1st International Workshop on Combining Modelling and Search-Based Software Engineering (CMSBSE 2013)
- 35th International Conference on Software Engineering (ICSE 2013)
- 10th International Conference on Service Oriented Computing (ICSOC 2012)
- 20th International Symposium on the Foundations of Software Engineering (FSE 2012)
- 15th International Conference on Fundamental Approaches to Software Engineering (FASE 2012)
- 30th International Symposium on Reliable Distributed Systems (SRDS 2011)
- 8th joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE 2011)
- 19th International Requirements Engineering Conference (RE'11)
- 33rd International Conference on Software Engineering (ICSE 2011)
- 8th European Conference on Web Services (ECOWS 2010)
- 12th International Symposium on Distributed Objects, Middleware, and Applications (DOA'10)
- 8th International Conference on Service Oriented Computing, (ICSOC 2010)
- 18th International Symposium on Foundations of Software Engineering (ACM SIGSOFT 2010 - FSE 18)
- Fundamental Approaches to Software Engineering (FASE'10)
- 32nd International Conference on Software Engineering (ICSE 2010)
- 7th International Joint Conference on Service Oriented Computing, (ICSOC & ServiceWave 2009)
- 24th International Conference on Automated Software Engineering (ASE 2009)
- 7th joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE 2009)
- 47th International Conference Objects, Models, Components, Patterns - TOOLS Europe 2009
- 31st International Conference on Software Engineering (ICSE 2009), New Ideas and Emerging Results Track
- 3rd Workshop on Middleware for Service Oriented Computing (MW4SOC 2008)
- 6th International Conference on Service Oriented Computing (ICSOC'08)
- ServiceWave 2008
- 15th Asia-Pacific Software Engineering Conference (APSEC 2008)
- 6th IEEE European Conference on Web Services (ECOWS 2008)
- 16th International Symposium on Foundations of Software Engineering (ACM SIGSOFT 2008 - FSE 16)
- 7th International Symposium on Software Testing and Analysis (ISSTA 2008)
- 7th International Symposium on Software Composition (SC 2008)
- 17th International World Wide Web Conference (WWW'08)
- 30th International Conference on Software Engineering (ICSE'08)
- 1st European Conference on Software Architecture (ECSA 2007)
- 1st International Workshop on Distributed Event Processing, Systems and Applications (DEPSA'07)
- 29th International Conference on Software Engineering (ICSE 2007)

Other

- 10/2009 – 11/2011 - Administrator of the SEWORLD mailing list
- 01/2007 – 09/2009 - Moderator of the SEWORLD mailing list
- Student volunteer at the 31st International Conference on Software Engineering (ICSE 2009)
- Student volunteer at the 30th International Conference on Software Engineering (ICSE 2008)

Presentations

Invited University and Research Institute Presentations

- 03/2014 “A Journey through Specification and Verification Techniques for Open-World Software”, IMDEA Software Institute, Madrid, Spain.
- 01/2012 “Lifelong verification for service compositions”, University of Luxembourg, Luxembourg, Luxembourg.

Invited Industry Presentations

- 02/2012 “A language-based approach to improve reliability of service-based applications”, Accenture Technology Labs, San Jose, CA, USA.
- 11/2011 “Specification Patterns from research to industry - a case study in service-based applications”, Credit Suisse AG, Zürich, Switzerland.
- 08/2011 “Lifelong Verification for Service Compositions”, Credit Suisse AG, Zürich, Switzerland.

Academic Conference Presentations

- 09/2017 “A Model-driven approach to trace checking of pattern-based temporal properties”. 20th International Conference on Model Driven Engineering Languages and Systems (MODELS 2017), Austin, TX, USA
- 01/2016 “Does your system deliver what you expect? An overview of online monitoring and verification techniques for checking business process compliance and access control policies”. FinTech R&D Innovation Conference, Luxembourg, Luxembourg. (invited speaker)
- 02/2014 “Specification patterns from research to industry: a case study in service-based applications”. 2014 German Software Engineering Conference (SE 2014), Kiel, Germany. (invited speaker)
- 09/2012 “The tale of SOLOIST: a specification language for service compositions interactions”. 9th International Symposium on Formal Aspects of Component Software (FACS'12), Mountain View, CA, USA.
- 06/2012 “Specification patterns from research to industry: a case study in service-based applications”. 34th International Conference on Software Engineering (ICSE 2012), Zürich, Switzerland.
- 05/2011 “Interface decomposition for service compositions”. 33rd International Conference on Software Engineering (ICSE 2011), Honolulu, Hawaii, HI, USA.
- 05/2009 “REMAN: A pro-active reputation management infrastructure for composite web services”. Demo at the 31st International Conference on Software Engineering (ICSE 2009), Vancouver, Canada.
- 05/2009 “Embedding continuous lifelong verification in service life cycles”. Workshop on Principles of Engineering Service-Oriented Systems (PESOS 2009), co-located with ICSE 2009, Vancouver, Canada.
- 11/2008 “Lifelong verification of dynamic service compositions”. Doctoral Symposium of the 16th ACM SIGSOFT International Symposium on the Foundations of Software Engineering (SIGSOFT 2008/FSE 16), Atlanta, GA USA.
- 09/2008 “SAVVY-WS at a glance: supporting verifiable dynamic service compositions”. 1st International Workshop on Automated engineering of Autonomous and run-time evolving Systems (ARAMIS 2008), co-located with ASE 2008, L'Aquila, Italy.
- 05/2008 “Towards a methodology for lifelong validation of service compositions”. 2nd International Workshop on Systems Development in SOA Environments (SDSOA 2008), co-located with ICSE 2008, Leipzig, Germany.
- 09/2007 “Automated Dynamic Maintenance of Composite Services based on Service Reputation”, International Conference on Service Oriented Computing (ICSOC 2007), Vienna, Austria.
- 09/2007 “Monitoring Conversational Web Services”, 2nd International Workshop on Service-Oriented Software Engineering (IW-SOSWE'07), co-located with ESEC/FSE 2007, Dubrovnik, Croatia.
- 06/2007 “A Model Checking approach to verify BPEL4WS Workflows”, IEEE International Conference on Service-Oriented Computing and Applications (SOCA 2007), Newport Beach, CA, USA.

Memberships

- ACM Member
- ACM SIGSOFT Member
- IEEE Member

Languages

Italian native
English fluent
French beginner
German beginner