

Domenico Bianculli

curriculum vitae updated on February 10, 2026

Current Position

- 02/2024 – present **Associate Professor in Software Engineering**, University of Luxembourg, SnT Centre and Faculty of Science, Technology and Medicine (FSTM) - Department of Computer Science, Luxembourg, Luxembourg
- 05/2020 – 01/2024 **Associate Professor/Chief Scientist 2 in Software Engineering**, University of Luxembourg, SnT Centre, Luxembourg, Luxembourg
- 11/2023 – present **Head of the SVV (Software Verification and Validation) research group**, University of Luxembourg, SnT Centre, Luxembourg, Luxembourg
- 2024 – present **Deputy Study Program Director of the “Master in Space Technologies and Business” (formerly known as “Interdisciplinary Space Master”)**, University of Luxembourg, Faculty of Science, Technology, and Medicine, Luxembourg, Luxembourg

Research Interests

My area of research is *software engineering*, with emphasis on the specification, verification and validation of software systems.

Employment History

- 01/2020 – 11/2023 **Deputy Head of the SVV (Software Verification and Validation) research group**, University of Luxembourg, SnT Centre, Luxembourg, Luxembourg
- 08/2016 – 04/2020 **Research Scientist**, University of Luxembourg, SnT Centre, Luxembourg, Luxembourg
- 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: Dimitra Giannakopoulou and 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*”
- 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: Carlo Ghezzi and 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: 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

Professional Qualifications

- 03/2018 **Right to supervise PhD candidates (ADR - “Autorisation à Diriger des Recherches”)**, *University of Luxembourg*, Luxembourg, Luxembourg
Doctoral Program in Computer Science and Computer Engineering - Doctoral School in Science and Engineering
- 03/2007 **Professional Engineer Qualification (“Abilitazione alla Professione di Ingegnere”)**, *Politecnico di Milano*, Milano, Italy
Qualification in Information Technology Engineering (Ingegneria dell’Informazione)

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*

Honors and Awards

- Distinguished Reviewer Award at the 46th International Conference on Software Engineering (ICSE 2024)
- Distinguished Reviewer Award at the 40th International Conference on Software Maintenance and Evolution (ICSME 2024)
- Distinguished Reviewer Award at the 37th IEEE/ACM International Conference on Automated Software Engineering (ASE 2022)
- Distinguished Reviewer Award at the 41st International Conference on Software Engineering (ICSE 2019)
- Distinguished Referee for ACM Transactions on Software Engineering and Methodology (2017–2018)
- Outstanding Reviewer Award at the 39th International Conference on Software Engineering (ICSE 2017)
- Outstanding Reviewer for Elsevier The Journal of Systems & Software, January 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

Publications

Refereed Journal Articles

- J1 Martina Siclari, Salomé Lannier, Olivier Voordeckers, Stanislaw Tosza, Sallam Abualhaija, Marcello Ceci, Nicolas Sannier, and Domenico Bianculli. Beyond silos: Bridging the gap between law and software engineering – challenges, successes, and lesson drawing. *Internet Policy Review*, 14, November 2025.
- J2 Fatemeh Hadadi, Qinghua Xu, Domenico Bianculli, and Lionel Briand. LLM meets ML: Data-efficient anomaly detection on unseen unstable logs. *ACM Trans. Softw. Eng. Methodol.*, October 2025.
- J3 Shan Ali, Chaima Boufaied, Domenico Bianculli, Paula Branco, and Lionel Briand. A comprehensive study of machine learning techniques for log-based anomaly detection. *Empir. Softw. Eng.*, 30(5):129:1–129:59, June 2025.
- J4 Claudio Mandrioli, Seung Yeob Shin, Martina Maggio, Domenico Bianculli, and Lionel Briand. Stress testing control loops in cyber-physical systems - RCR report. *ACM Trans. Softw. Eng. Methodol.*, pages 241:1–241:6, May 2025.
- J5 Claudio Mandrioli, Seung Yeob Shin, Domenico Bianculli, and Lionel Briand. Testing CPS with design assumptions-based metamorphic relations and genetic programming. *IEEE Trans. Software Eng.*, 51(6):1666–1684, April 2025.
- J6 Xiaochen Li, Domenico Bianculli, and Lionel Briand. Tracing content requirements in financial documents using multi-granularity text analysis. *Requirements Eng*, pages 1–24, April 2025.
- J7 Hichem Belgacem, Xiaochen Li, Domenico Bianculli, and Lionel Briand. A Machine Learning Approach for Automated Filling of Categorical Fields in Data Entry Forms - RCR Report. *ACM Trans. Softw. Eng. Methodol.*, 34(2):56:1–56:7, January 2025.
- J8 Hichem Belgacem, Xiaochen Li, Domenico Bianculli, and Lionel Briand. Automated anomaly detection for categorical data by repurposing a form filling recommender system. *ACM J. Data Inf. Qual.*, 16(3):16:1–16:28, October 2024.
- J9 Zanis Ali Khan, Donghwan Shin, Domenico Bianculli, and Lionel Briand. Impact of log parsing on deep learning-based anomaly detection. *Empir. Softw. Eng.*, 29:139:1–139:33, August 2024.
- J10 Fatemeh Hadadi, Joshua Heneage Dawes, Donghwan Shin, Domenico Bianculli, and Lionel Briand. Systematic evaluation of deep learning models for log-based failure prediction. *Empir. Softw. Eng.*, 29(5):105:1–105:53, June 2024.
- J11 Hichem Belgacem, Xiaochen Li, Domenico Bianculli, and Lionel Briand. Learning-based relaxation of completeness requirements for data entry forms. *ACM Transactions on Software Engineering and Methodology*, 33(3):77:1–77:32, March 2024.
- J12 Donato Clun, Donghwan Shin, Antonio Filieri, and Domenico Bianculli. Rigorous assessment of model inference accuracy using language cardinality. *ACM Transactions on Software Engineering and Methodology*, 33(4):95:1–95:39, January 2024.
- J13 Claudio Mandrioli, Seung Yeob Shin, Martina Maggio, Domenico Bianculli, and Lionel Briand. Stress testing control loops in cyber-physical systems. *ACM Transactions on Software Engineering and Methodology*, 33(2):35:1–35:58, December 2023.
- J14 Chaima Boufaied, Claudio Menghi, Domenico Bianculli, and Lionel Briand. Trace diagnostics for signal-based temporal properties. *IEEE Transactions on Software Engineering*, 49(5):3131 – 3154, May 2023.
- J15 Hichem Belgacem, Xiaochen Li, Domenico Bianculli, and Lionel Briand. A machine learning approach for automated filling of categorical fields in data entry forms. *ACM Transactions on Software Engineering and Methodology*, 32(2):47:1–47:40, April 2023.
- J16 Donghwan Shin, Domenico Bianculli, and Lionel Briand. PRINS: Scalable model inference for component-based system logs. *Empirical Software Engineering*, 27(4):87/1–32, April 2022.

- J17 Lwin Khin Shar Ha Thanh Le, Domenico Bianculli, Lionel Briand, and Cu Duy Nguyen. Automated reverse engineering of role-based access control policies of web applications. *Journal of Systems and Software*, 184:111109, February 2022.
- J18 Chaima Boufaied, Maris Jukss, Domenico Bianculli, Lionel Briand, and Yago Isasi Parache. Signal-based properties of cyber-physical systems: Taxonomy and logic-based characterization. *Journal of Systems and Software*, 174:110881, April 2021.
- J19 Julian Thomé, Lwin Khin Shar, Domenico Bianculli, and Lionel Briand. An integrated approach for effective injection vulnerability analysis of web applications through security slicing and hybrid constraint solving. *IEEE Transactions on Software Engineering*, 46(2):163–105, February 2020.
- J20 César Sánchez, Gerardo Schneider, Wolfgang Ahrendt, Ezio Bartocci, Domenico Bianculli, Christian Colombo, Yliés Falcone, Adrian Francalanza, Srđan Krstić, Joao M. Lourenço, Dejan Nickovic, Gordon J. Pace, Jose Rufino, Julien Signoles, Dmitriy Traytel, and Alexander Weiss. A Survey of Challenges for Runtime Verification from Advanced Application Domains (Beyond Software). *Formal Methods in System Design*, 54(3):279–335, 2019.
- J21 Chaima Boufaied, Domenico Bianculli, and Lionel Briand. A model-driven approach to trace checking of temporal properties with aggregations. *Journal of Object Technology*, 18(2):15:1–21, 2019. Proceedings of the 2019 European Conference on Modelling Foundations and Applications (ECMFA 2019), Eindhoven, The Netherlands.
- J22 Victor Basili, Lionel Briand, Domenico Bianculli, Shiva Nejati, Fabrizio Pastore, and Mehrdad Sabetzadeh. Software engineering research and industry: A symbiotic relationship to foster impact. *IEEE Software*, 35(5):44–49, September 2018.
- J23 Julian Thomé, Lwin Khin Shar, Domenico Bianculli, and Lionel Briand. Security slicing for auditing common injection vulnerabilities. *Journal of Systems and Software*, 137:766–783, March 2018.
- J24 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.
- J25 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.
- J26 Luciano Baresi, Domenico Bianculli, Carlo Ghezzi, Sam Guinea, and Paola Spoletini. Validation of web service compositions. *IET Softw.*, 1(6):219–232, December 2007.

Refereed Conference Publications

- C1 Marcello Ceci and Domenico Bianculli. Beyond the digital judge: Legal reasoning in compliance checking and compliance choices. In *DIGHUM-RES 2025 (Digital Humanism – Interdisciplinary Science and Research Conference) Proceedings*, LNCS, pages 137–152. Springer, November 2025.
- C2 Drishti Yadav, Claudio Mandrioli, Ezio Bartocci, and Domenico Bianculli. Fault injection for simulink-based CPS models: Insights and future directions. In *Proceedings of the 2025 40th ACM/IEEE International Conference on Automated Software Engineering (ASE'25)*, pages 3834–3839, November 2025.
- C3 Marcello Ceci, Nicolas Sannier, Sallam Abualhaija, Domenico Bianculli, and Michael Halling. When data stands before the law: an experience report on representing financial rules in SPARQL. In *RuleML+RR'25: Companion Proceedings of the 9th International Joint Conference on Rules and Reasoning*. CEUR, September 2025.
- C4 Orlando Amaral Cejas, Sallam Abualhaija, Nicolas Sannier, Marcello Ceci, and Domenico Bianculli. GDPR compliance in privacy policies of mobile apps: An overview of the state-of-practice. In *Proceedings of the 33rd IEEE International Requirements Engineering 2025 conference*, pages 320–331. IEEE, September 2025.
- C5 Sallam Abualhaija, Marcello Ceci, Nicolas Sannier, Domenico Bianculli, Salomé Lannier, Martina Siclari, Olivier Voordeckers, and Stanislaw Tosza. LLM-assisted extraction of regulatory requirements: A case study on the GDPR. In *Proceedings of the 33rd IEEE International Requirements Engineering 2025 conference*, pages 142–154. IEEE, September 2025.

- C6 Marco Alecci, Nicolas Sannier, Marcello Ceci, Sallam Abualhaija, Jordan Samhi, Domenico Bianculli, Tegawendé François d'Assise Bissyande, and Jacques Klein. Toward LLM-Driven GDPR Compliance Checking for Android Apps. In *Companion Proceedings of the 33rd ACM International Conference on the Foundations of Software Engineering (FSE'25)*, pages 606–610. ACM, July 2025.
- C7 Seung Yeob Shin, Fabrizio Pastore, and Domenico Bianculli. Towards generating executable metamorphic relations using large language models. In *Proceedings of the 17th International Conference on the Quality of Information and Communications Technology (QUATIC 2024)*, Pisa, Italy, volume 2178 of *Communications in Computer and Information Science*, pages 126–141. Springer, September 2024.
- C8 Joshua Dawes and Domenico Bianculli. Checking complex source code-level constraints using runtime verification. In *Companion Proceedings of the 32nd ACM International Conference on the Foundations of Software Engineering (FSE Companion '24)*, pages 255–265. ACM, July 2024.
- C9 Marcello Ceci, Domenico Bianculli, and Lionel Briand. Defining a model for content requirements from the law: an experience report. In *Proceedings of the 32nd IEEE International Requirements Engineering Conference (RE'24)*, pages 18–30. IEEE, June 2024.
- C10 Sallam Abualhaija, Marcello Ceci, Nicolas Sannier, Domenico Bianculli, Lionel Briand, Dirk Zetzsche, and Marco Bodellini. AI-enabled regulatory change analysis of legal requirements. In *Proceedings of the 32nd IEEE International Requirements Engineering Conference (RE'24)*, pages 5–17. IEEE, June 2024.
- C11 Cristina Stratan, Joshua Dawes, and Domenico Bianculli. Diagnosing violations of time-based properties captured in iCFTL. In *Proceedings of the 2024 International Conference on Formal Methods in Software Engineering (FormaliSE 2024)*, co-located with ICSE 2024, Lisbon, Portugal, pages 33–43. ACM, June 2024.
- C12 Joshua Dawes, Donghwan Shin, and Domenico Bianculli. Towards log slicing. In *Proceedings of the 26th International Conference on Fundamental Approaches to Software Engineering (FASE 2023)*, Paris, France, volume 13991 of *Lectures Notes in Computer Science*, pages 249–259. Springer, April 2023.
- C13 Joshua Dawes and Domenico Bianculli. Specifying source code and signal-based behaviour of CPS components. In *Proceedings of the 18th International Conference on Formal Aspects of Component Software (FACS 2022)*, November 10–11, 2022, Virtual Event, Norway, volume 13712 of *Lectures Notes in Computer Science*, pages 20–38. Springer, November 2022.
- C14 Zanis Ali Khan, Donghwan Shin, Domenico Bianculli, and Lionel Briand. Guidelines for assessing the accuracy of log message template identification techniques. In *Proceedings of the 44th International Conference on Software Engineering (ICSE '22)*, May 21–29, 2022, Pittsburgh, PA, USA, page 12. ACM, May 2022.
- C15 Joshua Dawes and Domenico Bianculli. Specifying properties over inter-procedural, source code level behaviour of programs. In *Proceedings of the 21st International Conference on Runtime Verification (RV 2021)*, October 11–14, 2021, Virtual Event, USA, volume 12974 of *Lectures Notes in Computer Science*, pages 23–41. Springer, October 2021.
- C16 Donghwan Shin, Zanis Ali Khan, Domenico Bianculli, and Lionel Briand. A theoretical framework for understanding the relationship between log parsing and anomaly detection. In *Proceedings of the 21st International Conference on Runtime Verification (RV 2021)*, October 11–14, 2021, Virtual Event, USA, volume 12974 of *Lectures Notes in Computer Science*, pages 277–287. Springer, October 2021.
- C17 Salma Messaoudi, Donghwan Shin, Annibale Panichella, Domenico Bianculli, and Lionel Briand. Log-based slicing for system-level test cases. In *Proceedings of the 30th International Symposium on Software Testing and Analysis (ISSTA 2021)*, July 11–17, 2021, Virtual Event, Denmark, pages 517–528. ACM, July 2021.
- C18 Claudio Menghi, Enrico Viganò, Domenico Bianculli, and Lionel Briand. Trace-checking CPS properties: Bridging the cyber-physical gap. In *Proceedings of the 43rd International Conference on Software Engineering (ICSE'21)*, May 23–29, 2021, Virtual Event, Spain, pages 847–859. IEEE, May 2021.

- C19 Chaima Boufaied, Claudio Menghi, Domenico Bianculli, Lionel Briand, and Yago Isasi-Parache. Trace-checking signal-based temporal properties: A model-driven approach. In *Proceedings of the 2020 35th ACM/IEEE International Conference on Automated Software Engineering (ASE'20)*, September 21–25, 2020, Virtual Event, Australia, pages 1004–1015. ACM, September 2020.
- C20 Ameni Ben Fadhel, Domenico Bianculli, and Lionel Briand. Model-driven run-time enforcement of complex role-based access control policies. In *Proceedings of the 2018 33rd ACM/IEEE International Conference on Automated Software Engineering (ASE'18)*, September 3–7, 2018, Montpellier, France, pages 248–258. ACM, September 2018.
- C21 Wei Dou, Domenico Bianculli, and Lionel Briand. Model-driven trace diagnostics for pattern-based temporal specifications. In *Proceedings of the 2018 ACM/IEEE 21st International Conference on Model Driven Engineering Languages and Systems (MODELS 2018)*, Copenhagen, Denmark, pages 278–288. ACM, October 2018.
- C22 Salma Messaoudi, Annibale Panichella, Domenico Bianculli, Lionel Briand, and Raimondas Sasnauskas. A search-based approach for accurate identification of log message formats. In *Proceedings of the 26th IEEE/ACM International Conference on Program Comprehension (ICPC 2018)*, Gothenborg, Sweden, pages 167–177. ACM, May 2018.
- C23 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, pages 323–333. IEEE, September 2017.
- C24 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.
- C25 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.
- C26 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.
- C27 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.**
- C28 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.
- C29 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.
- C30 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.
- C31 Wei Dou, Domenico Bianculli, and Lionel Briand. Revisiting model-driven engineering for run-time 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.

- C32 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.
- C33 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.
- C34 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.**
- C35 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.
- C36 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.
- C37 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.
- C38 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.
- C39 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.
- C40 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.
- C41 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.
- C42 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.
- C43 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.
- C44 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.

Refereed Book Chapters

- BC1 Shaukat Ali, Domenico Bianculli, Antonio Cicchetti, Robbert Jongeling, Violet Ka I. Pun, Volker Stolz, and Catia Trubiani. Uncertainty-aware devops for cyber-physical systems and runtime verification. In Sebastiano Panichella, Paolo Arcaini, Myra B. Cohen, and Aitor Arrieta, editors, *Roadmap for DevOps in Cyber-Physical Systems: Challenges and Future Directions (Communications of Shonan Meetings)*, pages 83–101. Springer Nature Singapore, Singapore, February 2026.
- BC2 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.
- BC3 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.

Refereed Workshop Publications

- WS1 Seung Yeob Shin, Fabrizio Pastore, and Domenico Bianculli. Quantum program linting with LLMs: Emerging results from a comparative study. In *Proceedings of the 2025 IEEE International Conference on Quantum Computing and Engineering (QCE) - Q-SET workshop*, pages 181–186. IEEE, August 2025.
- WS2 Nicolas Sannier, Marcello Ceci, Sallam Abualhaija, Domenico Bianculli, and Michael Halling. A model toward formalizing and monitoring compliance of investment funds activities. In *Proceedings of the 14th International Model-Driven Requirements Engineering (MoDRE) workshop, co-located with RE'24, Reykjavik, Iceland*, pages 272–280. IEEE, June 2024.
- WS3 Sallam Abualhaija, Marcello Ceci, Nicolas Sannier, Domenico Bianculli, Dirk Zetsche, and Marco Bodellini. Toward automated change impact analysis of financial regulations. In *Proceedings of the 1st Workshop on Software Engineering Challenges in Financial Firms (FinanSE 2024), co-located with ICSE 2024, Lisbon, Portugal*, pages 31–32. ACM, August 2024.
- WS4 Marcello Ceci, Nicolas Sannier, Donghwan Shin, Sallam Abualhaija, Domenico Bianculli, and Michael Halling. Toward automated compliance checking of fund activities using runtime verification techniques. In *Proceedings of the 1st Workshop on Software Engineering Challenges in Financial Firms (FinanSE 2024), co-located with ICSE 2024, Lisbon, Portugal*, pages 19–20. ACM, August 2024.
- WS5 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.
- WS6 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. EasyChair, September 2017.
- WS7 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.
- WS8 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.
- WS9 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.

- WS10 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.
- WS11 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.
- WS12 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.
- WS13 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, Tutorials, Artifact Papers, Extended Abstracts, and Posters

- MC1 Yoann Marquer and Domenico Bianculli. Introduction to quantum software engineering. In *Product-Focused Software Process Improvement. Industry, Doctoral-Symposium, Tutorial, and Workshop Papers (PROFES 2025)*, pages 163–168, Cham, 2025. Springer Nature Switzerland.
- MC2 Yoann Marquer and Domenico Bianculli. A piece of QAICCC: Towards a countermeasure against crosstalk attacks in quantum servers. In *Proceedings of the 2025 IEEE International Conference on Quantum Computing and Engineering (QCE)*, pages 538–539. IEEE, August 2025. Extended Abstract + Poster.
- MC3 Claudio Menghi, Enrico Viganò, Domenico Bianculli, and Lionel Briand. ThEodorE: a trace checker for CPS properties. In *Proceedings of the 43rd International Conference on Software Engineering Companion (ICSE'21), May 23–29, 2021, Virtual Event, Spain*, pages 183–184. IEEE, May 2021. Artifact Evaluation track.
- MC4 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.
- MC5 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.
- MC6 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.
- MC7 Domenico Bianculli, Angelo Morzenti, Matteo Pradella, and Pierluigi San Pietro and Paola Spole-tini. 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.

Edited Books and Proceedings

- EB1 Domenico Bianculli and Elena Gómez-Martínez, editors. *Software Engineering and Formal Methods - 23rd International Conference, SEFM 2025, Toledo, Spain, November 10-14, 2025, Proceedings*, volume 16192 of *Lecture Notes in Computer Science*. Springer, 2026.
- EB2 Domenico Bianculli, Hassan Sartaj, Vasilios Andrikopoulos, Cesare Pautasso, Tommi Mikkonen, Jennifer Perez, Tomáš Bureš, Martina De Sanctis, Henry Muccini, Elena Navarro, Mohamed Soliman, and Uwe Zdun, editors. *Software Architecture. ECSA 2025 Tracks and Workshops*, volume 15982 of *Lecture Notes in Computer Science*. Springer, September 2025.

- EB3 Domenico Bianculli, Nenad Medvidović, and David R. Rosenblum, editors. *40 editions of ICSE: the ruby anniversary celebration*. Book distributed at the 40th International Conference on Software Engineering, May 2018.
- EB4 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.
- EB5 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.
- EB6 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.
- EB7 Domenico Bianculli, Mehdi Jazayeri, and Mauro Pezzè, editors. *Matinée with Carlo Ghezzi - from Programming Languages to Software Engineering*. CreateSpace, June 2012.
- EB8 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.
- Non-Refereed Preprints and Technical Reports**
- TR1 Yoann Marquer, Domenico Bianculli, and Lionel Briand. SAGA: Detecting security vulnerabilities using static aspect analysis. *CoRR*, January 2026.
- TR2 Junjie Huang, Minghua He, Jinyang Liu, Yintong Huo, Domenico Bianculli, and Michael R. Lyu. CodeAD: Synthesize code of rules for log-based anomaly detection with LLMs. *CoRR*, October 2025.
- TR3 Nyyti Saarimäki, Donghwan Shin, and Domenico Bianculli. Taxonomy of software log smells. *CoRR*, abs/2412.09284, 2024.
- TR4 Orlando Amaral Cejas, Nicolas Sannier, Sallam Abualhaija, Marcello Ceci, and Domenico Bianculli. GDPR-relevant privacy concerns in mobile apps research: A systematic literature review. *CoRR*, abs/2411.19142, 2024.
- TR5 Donghwan Shin, Domenico Bianculli, and Lionel C. Briand. Effective removal of operational log messages: an application to model inference. *CoRR*, abs/2004.07194, 2020.
- TR6 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.
- TR7 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.
- TR8 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.
- TR9 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.
- TR10 Domenico Bianculli, Carlo Ghezzi, Srđan Krstić, and Pierluigi San Pietro. From SOLOIST to CLTLB(ℑ): Checking quantitative properties of service-based applications. Technical Report 2013.26, Politecnico di Milano - Dipartimento di Elettronica, Informazione e Bioingegneria, October 2013.
- TR11 Domenico Bianculli, Antonio Filieri, Carlo Ghezzi, and Dino Mandrioli. A syntactic-semantic approach to incremental verification. *CoRR*, abs/1304.8034, May 2013.

- TR12 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.
- TR13 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 Publications

- O1 Massimiliano Di Penta, Domenico Bianculli, Michael R. Lyu, Sebastián Uchitel, and Andy Zaidman. Relevance of log mining and analytics papers to IEEE transactions on software engineering. *IEEE Trans. Software Eng.*, 51(8):2211–2212, August 2025.
- O2 Sebastián Uchitel, Marsha Chechik, Massimiliano Di Penta, Bram Adams, Nazareno Aguirre, Gabriele Bavota, Domenico Bianculli, Kelly Blincoe, Ana Cavalcanti, Yvonne Dittrich, Filomena Ferrucci, Rashina Hoda, LiGuo Huang, David Lo, Michael R. Lyu, Lei Ma, Jonathan I. Maletic, Leonardo Mariani, Collin McMillan, Tim Menzies, Martin Monperrus, Ana Moreno, Nachiappan Nagappan, Liliana Pasquale, Patrizio Pelliccione, Michael Pradel, Rahul Purandare, Sukyoung Ryu, Mehrdad Sabetzadeh, Alexander Serebrenik, Jun Sun, Chakkrit Kla Tantithamthavorn, Christoph Treude, Manuel Wimmer, Yingfei Xiong, Tao Yue, Andy Zaidman, Tao Zhang, and Hao Zhong. Scoping software engineering for AI: the TSE perspective. *IEEE Trans. Software Eng.*, 50(11):2709–2711, 2024.
- O3 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.
- O4 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.
- O5 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.
- O6 Patricia Lago, Grace A. Lewis, Andreas Metzger, Vladimir Tasic, Domenico Bianculli, Antinisa 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.

Research Projects and Grants

Public Research Grants Acquisition

- 09/2026 – 08/2029 **C25/IS-SAS/19585680 - “FREELY - Frequency-enhanced verification and validation of CPS”**, University of Luxembourg, funded by Fonds National de la Recherche Luxembourg under the CORE INTER scheme
Role: PI (Co-PI: Ezio Bartocci)
Amount: EUR 671 000
- 2025–2026 **KITS24/19067232 - “SnT-R2S”**, University of Luxembourg, funded by Fonds National de la Recherche Luxembourg under the KITS scheme
Role: Co-Principal Coordinator (Principal Coordinator: Carlo Duprel)
Amount: EUR 249 000
- 09/2023 – 08/2026 **C22/IS/17373407 - “LOGODOR - Automated Log Smell Detection and Removal”**, University of Luxembourg, funded by Fonds National de la Recherche Luxembourg under the CORE scheme
Role: Sole PI
Amount: EUR 678 000
- 11/2023 – 12/2025 **“AFRICA: Automated Financial Regulations Change Impact Analysis”**, University of Luxembourg, funded by the SnT Centre of the University of Luxembourg as part of the FNR-funded National Centre of Excellence in Research on Financial Technologies (NCER-FT)
Role: PI (co-PI: Dirk Zetsche)
Amount: EUR 199 584

- 05/2023 – 12/2025 **“ICCOFIDO: Incremental compliance checking of financial documents”**, *University of Luxembourg*, funded by the SnT Centre of the University of Luxembourg as part of the FNR-funded National Centre of Excellence in Research on Financial Technologies (NCER-FT)
Role: PI (co-PI: Stanislaw Tosza)
Amount: EUR 189 832
- 05/2023 – 12/2025 **“RUMOFA: Runtime monitoring of fund activities”**, *University of Luxembourg*, funded by the SnT Centre of the University of Luxembourg as part of the FNR-funded National Centre of Excellence in Research on Financial Technologies (NCER-FT)
Role: PI (co-PI: Michael Halling)
Amount: EUR 199 078
- 03/2023 – 12/2025 **“REGCHECK: Program analysis for regulatory compliance assessment of FinTech Software”**, *University of Luxembourg*, funded by the SnT Centre of the University of Luxembourg as part of the FNR-funded National Centre of Excellence in Research on Financial Technologies (NCER-FT)
Role: Co-PI (PI: Jacques Klein, other co-PI: Stanislaw Tosza)
Amount: EUR 199 818
- 01/2021 – 12/2023 **957254 - “COSMOS: DevOps for Complex Cyber-physical Systems”**, *University of Luxembourg*, funded by the European Union under the Horizon 2020 research and innovation programme
Role: PI
Amount: EUR 4 998 571,25
Amount (UL): EUR 710 005
- 2020 – 2026 **14016225 - “INSTRUCT: Integrated Satellite-Terrestrial Systems for Ubiquitous Beyond 5G Communications”**, *University of Luxembourg*, funded by Fonds National de la Recherche Luxembourg under the IBPG scheme (Industrial Partnership with SES)
Role: Technical contributor to the proposal and coordinator for the “System Technologies” area (Program Director: Symeon Chatzinotas, Industrial Directors: Frank Zimmer/Joel Grotz)
Amount: 10 PhD grants and 7 Postdoc grants
- 01/2018–12/2020 **C-PPP17/IS/11602677 - “LISTENER: Log-driven, Search-based Test Generation for Ground Control Systems”**, *University of Luxembourg*, funded by Fonds National de la Recherche Luxembourg under the CORE PPP scheme (Industrial Partnership with SES TechCom)
Role: Co-PI (PI: Lionel Briand)
Amount: EUR 371 000
- 01/2017 – 12/2019 **“MOVIDA: Model-driven Trace Checking of Quantitative Properties using Big Data Technologies”**, *University of Luxembourg*, funded by the University of Luxembourg under the IRP scheme
Role: Co-PI (PI: Mehrdad Sabetzadeh)
Amount: EUR 163 000
- 09/2016 – 08/2021 **694277 - “TUNE: Testing the Untestable”**, *University of Luxembourg*, funded by the European Research Council under the ERC Advanced Grant programme
Role: Technical contributor to the proposal (PI: Lionel Briand)
Amount: EUR 2 307 932
- 06/2016–11/2018 **INTER/AAL/15/11213850 - “Enhanced Daily Living and Health 2 – an incentive based service”**, *University of Luxembourg*, funded by Fonds National de la Recherche Luxembourg
Role: Technical contributor to the proposal (PI: Lionel Briand)
Amount: EUR 476 000
- 01/2016 – 12/2019 **INTER/DFG/14/11092585 - “CRC1223 - Methods and Tools for Understanding and Controlling Privacy”**, *University of Luxembourg*, funded by Fonds National de la Recherche Luxembourg
Role: Lead Scientist (PI: Lionel Briand)
Amount: EUR 688 000
- 04/2009 – 03/2010 **PBTIP2-125604 - “Lifelong Verification of Dynamic Service Compositions”**, *Università della Svizzera italiana*, funded by the Swiss National Science Foundation (SNF) under the program for fellowships for prospective researchers, to support a research visit at the NASA Ames Research Center
Role: Sole PI
Amount: CHF 44 950
- Industry-partnered Research Projects Acquisition**
- 12/2023 – 11/2026 **“Automated Testing of Web Applications”**, *University of Luxembourg*, industry partner: Q-Leap Luxembourg
Role: PI
- 10/2019 – 10/2022 **“Automated Compliance Checking of Fund Documents”**, *University of Luxembourg*, industry partner: CSSF Luxembourg
Role: Lead Scientist and Industry Partner Manager (PI: Lionel Briand)

- 03/2019 – 03/2022 **“Self-healing Distributed Security”**, *University of Luxembourg*, industry partner: HITEC Luxembourg
Role: Co-PI and Industry Partner Manager (PI: Lionel Briand)
- 01/2019 – 12/2022 **“Automated Quality Assurance for the Management of Financial Data”**, *University of Luxembourg*, industry partner: BGL BNP Paribas - Alphonse Weicker foundation
Role: Lead Scientist and Industry Partner Manager (PI: Lionel Briand)
- 05/2018 – 08/2021 **“Specification and Verification of Signal-based Properties for Cyber-Physical Systems”**, *University of Luxembourg*, industry-partner project with LuxSpace
Role: Co-PI and Industry Partner Manager (PI: Lionel Briand)
- 10/2016 – 09/2019 **“Search-based Integration Testing for Ground Control Systems”**, *University of Luxembourg*, industry partner: SES TechCom
Role: Lead Scientist and Industry Partner Manager (PI: Lionel Briand)
- 11/2013 – 09/2017 **“Model-driven Run-time Verification of RBAC policies”**, *University of Luxembourg*, industry partner: HITEC Luxembourg
Role: Lead Scientist and Industry Partner Manager (PI: Lionel Briand)
- 04/2013 – 10/2016 **“Model-driven Run-time Verification of eGovernment business processes”**, *University of Luxembourg*, industry partner: CTIE Luxembourg
Role: Lead Scientist and Industry Partner Manager (PI: Lionel Briand)

Participation in Research Projects

- 03/2025 – 02/2028 **“AGLAIA - A General Legal Architecture for Intelligent Applications”**, *University of Luxembourg*, funded by Fonds National de la Recherche Luxembourg under the CORE scheme
Role: Scientific Advisor (PI: Marcello Ceci)
- 01/2025 – 12/2026 **“ContTestCPS - Control Theory-based Testing of Cyber-Physical Systems”**, *University of Luxembourg*, funded by European Commission through the HORIZON TMA MSCA Postdoctoral Fellowships action
Role: Supervisor (Supervised Researcher: Claudio Mandrioli)
- 09/2024 – 08/2027 **“PLAITO - Automated Completeness Enhancement of Requirements towards Improved Trustworthiness”**, *University of Luxembourg*, funded by Fonds National de la Recherche Luxembourg under the CORE scheme
Role: Scientific Advisor (PI: Sallam Abualhaija)
- 09/2016 – 02/2022 **“TUNE: Testing the Untestable”**, *University of Luxembourg*, funded by the European Research Council under the ERC Advanced Grant programme
Role: Co-Lead Scientist (PI: Lionel Briand)
- 01/2017 – 12/2019 **“ReACP: Context and Business Aware Reverse-engineering and Testing for Access Control Policies”**, *University of Luxembourg*, funded by the University of Luxembourg
Role: Lead Scientist (PI: 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
Role: Technical Contributor (PIs: Carlo Ghezzi, 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
Role: Technical Contributor (local project coordinators: Mehdi Jazayeri, 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
Role: Technical Contributor (PIs: Carlo Ghezzi, 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
Role: Technical Contributor (local project coordinators: Antonio Carzaniga, Alexander L. Wolf)

Supervision of Individuals

Doctoral Students

- 10/2024 – present Zahra Ghavidel Yadzi, University of Luxembourg
- 05/2024 – present Mehdi Salemi, University of Luxembourg

- 02/2022 – present Cristian Stratan, University of Luxembourg
- Graduated Doctoral Students**
- 01/2022 – 11/2025 Bahar Hadadi, thesis: “Automated Log Analysis: Failure Prediction and Anomaly Detection using Machine Learning and Large Language Models”, University of Ottawa, Canada, co-advised with Lionel Briand
- 11/2019 – 11/2023 Zanis Khan, thesis: “On Log Parsing And Log-Based Anomaly Detection: An Empirical Evaluation”, University of Luxembourg, Luxembourg
- 04/2019 – 09/2023 Hichem Belgacem, thesis: “ML-based data-entry automation and data anomaly detection to support data quality assurance”, University of Luxembourg, Luxembourg
- 09/2016 – 06/2021 Salma Messaoudi, thesis: “Leveraging Execution Logs to Support Model Inference and Software Testing”, University of Luxembourg, Luxembourg, co-advised with Lionel Briand and Donghwan Shin
- 01/2017 – 01/2021 Chaima Boufaied, thesis: “Specification and Model-driven Trace Checking of Complex Temporal Properties”, University of Luxembourg, Luxembourg
- 07/2015 – 04/2018 Julian Thomé, thesis: “A scalable and accurate Hybrid Vulnerability Analysis Framework”, University of Luxembourg, Luxembourg, co-advised with Lionel Briand
- 10/2013 – 09/2017 Ameni Ben Fadhel, thesis: “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, thesis: “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, thesis: “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, thesis: “Trace Checking of Quantitative Properties”, Politecnico di Milano, Italy, co-advised with Carlo Ghezzi and Pierluigi San Pietro

Postdoctoral Researchers

- 09/2025 – present Van Hoang Le, University of Luxembourg, Luxembourg
- 09/2025 – present Maryse Ernzer, University of Luxembourg, Luxembourg
- 03/2025 – present Souvick Das, University of Luxembourg, Luxembourg
- 03/2025 – present Drishti Yadav, University of Luxembourg, Luxembourg
- 02/2025 – present Davide Corradini, University of Luxembourg, Luxembourg
- 01/2024 – present Nyyti Saarimäki, University of Luxembourg, Luxembourg
- 03/2023 – present Marcello Ceci, University of Luxembourg, Luxembourg
- 01/2023 – present Claudio Mandrioli, University of Luxembourg, Luxembourg
- 12/2021 – present Nicolas Sannier, University of Luxembourg, Luxembourg
- 11/2021 – present Yoann Marquer, University of Luxembourg, Luxembourg
- 06/2021 – 11/2021 Bogdan Toader, University of Luxembourg, Luxembourg, co-supervised with Lionel Briand
- 05/2021 – 10/2021 Danish Vasan, University of Luxembourg, Luxembourg
- 01/2021 – 01/2022 Chaima Boufaied, University of Luxembourg, Luxembourg
- 12/2020 – 03/2024 Joshua Dawes, University of Luxembourg, Luxembourg
- 11/2019 – 05/2020 Areeg Samir, University of Luxembourg, Luxembourg
- 11/2019 – 07/2021 Marcello Ceci, University of Luxembourg, Luxembourg, co-supervised with Lionel Briand
- 10/2019 – 09/2021 Claudio Menghi, University of Luxembourg, Luxembourg, co-supervised with Lionel Briand and Shiva Nejati
- 09/2019 – 02/2022 Xiaochen Li, University of Luxembourg, Luxembourg
- 08/2018 – 07/2022 Donghwan Shin, University of Luxembourg, Luxembourg
- 09/2018 – 03/2019 Erik Derr, University of Luxembourg, Luxembourg, co-supervised with Lionel Briand
- 05/2018 – 09/2019 Maris Jukss, University of Luxembourg, Luxembourg, co-supervised with Lionel Briand and Shiva Nejati
- 05/2018 – 09/2018 Julian Thomé, University of Luxembourg, Luxembourg

- 10/2017 – 09/2018 Ameni Ben Fadhel, University of Luxembourg, Luxembourg
- 10/2016 – 02/2018 Annibale Panichella, University of Luxembourg, Luxembourg, co-supervised with Lionel Briand and Shiva Nejati
- 08/2016 – 06/2017 Lwin Khin Shar, University of Luxembourg, Luxembourg, co-supervised with Lionel Briand

Visiting Researchers and Interns

- 03/2024 – 09/2024 Gioacchino Sterlicchio, Università di Bari and Politecnico di Bari, Italy
- 10/2023 – 12/2023 Antonietta Capasso, Università degli Studi del Sannio, Italy
- 01/2021 – 09/2021 Donato Clun, Imperial College London, United Kingdom
- 06/2020–09/2020 Enrico Viganò, Politecnico di Milano, Italy
- 04/2017–06/2017 Simone Scalabrino, Università del Molise, Italy

Doctoral Students – Thesis Supervision Committee Member

- 10/2025 – present Sarthak Banerjee, University of Luxembourg, Luxembourg
- 06/2024 – 08/2025 Amin Naghavi, University of Luxembourg, Luxembourg
- 11/2020 – 06/2025 Kseniya Cherenkova, University of Luxembourg, Luxembourg
- 01/2022 – 09/2023 Orlando Amaral Cejas, University of Luxembourg, Luxembourg

Doctoral Students – Dissertation Defense Jury Chair

- 02/2026 Emre Koçyiğit, University of Luxembourg, Luxembourg
- 12/2025 Amin Naghavi, University of Luxembourg, Luxembourg
- 07/2025 Mejri Nesryne, University of Luxembourg, Luxembourg
- 1/2025 Luiz Matheus De Alencar Carvalho, University of Luxembourg, Luxembourg
- 11/2024 Tong Wei, University of Luxembourg, Luxembourg

Doctoral Students – Dissertation Defense Jury Member

- 09/2025 Jahanzaib Malik, University of Luxembourg, Luxembourg
- 02/2025 Issam Sedki, Concordia University, Canada
- 11/2024 Drishti Yadav, Technical University of Vienna, Austria
- 06/2024 Mohammad Rezaalipour, Università della Svizzera italiana, Switzerland
- 09/2023 Orlando Amaral Cejas, University of Luxembourg, Luxembourg
- 09/2022 Alvaro Mario Veizaga Campero, University of Luxembourg, Luxembourg
- 09/2021 Seifeddine Bettaieb, University of Luxembourg, Luxembourg

Doctoral Dissertation Reviewer

- 02/2026 Beatrice Melani, Politecnico di Milano, Italy
- 12/2014 Matteo Camilli, Università degli Studi di Milano, Italy

Graduated MSc Students

- Spring 2024 Antonietta Capasso, thesis: “The Effect of Software Vulnerabilities on Open-Source Cyber-Physical Systems”, Università degli Studi del Sannio, Italy (co-advised with Massimiliano Di Penta)
- Fall 2023 Sulochana Pureti Venkana, thesis: “Improving Log Slicing through Context-aware Variable Heuristic”, University of Luxembourg, Luxembourg
- Fall 2013 Alessandro Maria Rizzi, thesis: “Incremental Reachability Checking of KernelC Programs using Matching Logic”, Politecnico di Milano, Italy, co-advised with Carlo Ghezzi, Dino Mandrioli, and Antonio Filieri
- Fall 2012 Srđan Krstić, thesis: “Verification of quantitative properties of service-based applications”, Politecnico di Milano, Italy, co-advised with Carlo Ghezzi
- Spring 2008 Mauro Luigi Drago, thesis: “Transparent reputation management for composite web services”, Politecnico di Milano, Italy, co-advised with Carlo Ghezzi

MSc Thesis Reviewer

- 09/2025 Riccardo Scalia, University of Luxembourg, Luxembourg
- 08/2025 Arkadii Kazanskii, University of Luxembourg, Luxembourg
- 08/2025 João Pedro Pardal Teigão, University of Luxembourg, Luxembourg
- 08/2025 Cosmin Radoi, University of Luxembourg, Luxembourg

- 09/2024 Attila Nemet, University of Luxembourg, Luxembourg
- 08/2024 Flaavio De Jesus Matias, University of Luxembourg, Luxembourg
- 08/2022 Harisha Prakash, University of Luxembourg, Luxembourg
- 08/2022 Vinicius Amaro Cechin, University of Luxembourg, Luxembourg

Teaching Activities

Courses Developed and Taught

University of Luxembourg, Luxembourg, Luxembourg

- Summer 2026 **Programming Fundamentals 4** (4 ECTS), Bachelor in Computer Science
- Winter 2025 **Log Analysis** (3 ECTS), Master in Cybersecurity and Cyber Defence
- Winter 2025 **Space Informatics Fundamentals** (3 ECTS), Master in Space Technologies and Business
- Summer 2025 **Programming Fundamentals 4** (4 ECTS), Bachelor in Computer Science
- Winter 2024 **Space Informatics Fundamentals** (3 ECTS), Master in Space Technologies and Business
- Summer 2024 **Programming Fundamentals 4** (4 ECTS), Bachelor in Computer Science
- Summer 2024 **Space Informatics 2** (3 ECTS), Interdisciplinary Space Master (co-instructor with Fabrizio Pastore)
- Winter 2023 **Space Informatics 1** (5 ECTS), Interdisciplinary Space Master (co-instructor with Fabrizio Pastore)
- Summer 2023 **Space Informatics 2** (3 ECTS), Interdisciplinary Space Master (co-instructor with Fabrizio Pastore)
- Winter 2022 **Space Informatics** (5 ECTS), Interdisciplinary Space Master (co-instructor with Fabrizio Pastore)

Courses Taught

University of Luxembourg, Luxembourg, Luxembourg

- Summer 2023 **Software Engineering 2** (4 ECTS), Bachelor in Computer Science (co-instructor with Yves Le Traon, Lionel Briand, Fabrizio Pastore)
- Summer 2023 **Software Testing** (4 ECTS), Bachelor in Applied Information Technology (co-instructor with Yves Le Traon, Dietmar Gehring, Lionel Briand, Fabrizio Pastore)
- Summer 2022 **Software Engineering 2** (4 ECTS), Bachelor in Computer Science (co-instructor with Yves Le Traon, Lionel Briand, Fabrizio Pastore)
- Summer 2022 **Software Testing** (4 ECTS), Bachelor in Applied Information Technology (co-instructor with Yves Le Traon, Dietmar Gehring, Lionel Briand, Fabrizio Pastore)

Extracurricular activities

University of Luxembourg, Luxembourg, Luxembourg

- July 2025 Lecture on “Revisiting the triptychs of software engineering in the FinTech and RegTech realms Rights”, Europaeum Summer School on AI and the Digital Future

Teaching Assistantships

Università della Svizzera italiana, Lugano, Switzerland

- Fall 2010 **Programming Languages** (6 ECTS), Master in Informatics (Instructor: Mehdi Jazayeri)
- Spring 2009 **Automata and Formal Languages** (3 ECTS), Bachelor in Informatics (Instructor: Jürg Nievergelt)
- Fall 2008 **Programming Languages** (6 ECTS), Master in Informatics (Instructor: Mehdi Jazayeri)
- August 2008 **Remixing the web: Fundamentals of Mashup Development**, Course taught to high-school students as part of the Swiss initiative “Informatica '08”
- Spring 2008 **Automata and Formal Languages** (3 ECTS), Bachelor in Informatics (Instructor: Laura Pozzi)
- Fall 2007 **Programming Languages** (6 ECTS), Master in Informatics (Instructor: Mehdi Jazayeri)
- Spring 2007 **Automata and Formal Languages** (3 ECTS), Bachelor in Informatics (Instructor: Laura Pozzi)
- Spring 2007 **Software Design** (6 ECTS), Bachelor in Informatics (Instructor: Walter Binder)
- Fall 2006 **Introduction to Programming in C** (2 ECTS), Bachelor in Informatics (Instructor: Antonio Carzaniga)
- Fall 2006 **Hardware-Software Codesign** (6 ECTS), Bachelor in Informatics (Instructor: Laura Pozzi)

Tutorships

Politecnico di Milano, Milano, Italy

Spring 2006 **Software Engineering Lab**, Bachelor in Computer Engineering (Instructor: Luciano Baresi)

Fall 2005 **Programming Lab**, Bachelor in Electrical Engineering (Instructor: Paola Spoletini)

Professional Service

Editorial Boards Membership

- 12/2025 – present Associate Editor, ACM Transactions on Software Engineering and Methodology
- 03/2025 – present Guest Editor, Special Issue of Elsevier Science of Computer Programming on “Tools featured at the 18th IEEE International Conference on Software Testing, Verification and Validation (ICST) 2025”
- 04/2021 – 12/2025 Associate Editor, IEEE Transactions on Software Engineering
- 01/2019 – 11/2025 Member, Board of Distinguished Reviewers, ACM Transactions on Software Engineering and Methodology

Steering Committees Membership

- 04/2025 – present Member, Steering Committee, International Conference on Software Engineering and Formal Methods (SEFM)
- 01/2022 – 10/2025 Member, Steering Committee, International Conference on Formal Methods in Software Engineering (FormaliSE)

Award Committees

- Member, Selection Committee, 2026 & 2025 ACM SIGSOFT Senior Awards (Outstanding Research Award, Distinguished Service Award, Influential Educator Award)

Conference/Workshop/Track Chairmanship

- Area co-chair (Dependability and Security), 49th International Conference on Software Engineering (ICSE 2027)
- Program co-chair, 3rd International Workshop on AI Solutions for Software Engineering Challenges in Financial Firms (FinanSE 2026)
- Program co-chair, 23rd International Conference on Software Engineering and Formal Methods (SEFM 2025)
- Shadow Research Track Program Committee Co-chair, 47th International Conference on Software Engineering (ICSE 2025)
- Testing tools and demonstrations Co-chair, 18th IEEE International Conference on Software Testing, Verification and Validation (ICST 2025)
- Co-chair of the track “Quality in the Age of the AI”, 17th International Conference on the Quality of Information and Communications Technology (QUATIC 2024)
- Program co-chair, Doctoral Forum, 38th IEEE/ACM International Conference on Automated Software Engineering (ASE 2023)
- Tutorial track chair of the 2022 ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2022)
- Program co-chair, 8th International Conference on Formal Methods in Software Engineering (FormaliSE 2020), collocated with ICSE 2020
- Program co-chair, 2nd International Workshop on Security for and by Model-Driven Engineering (SecureMDE 2020)
- Program co-chair, International Workshop on Security for and by Model-Driven Engineering (SecureMDE 2018)
- 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

- 2026 International Conference on Formal Methods in Software Engineering (FormaliSE 2026)
- 2025 ACM International Conference on Foundations of Software Engineering (FSE 2026)
- 34th IEEE International Requirements Engineering (RE 2026)
- Digital Humanism - Interdisciplinary Science and Research Conference (DIGHUM-RES 2025)
- 2nd International Workshop on AI Solutions for Software Engineering Challenges in Financial Firms (FinanSE 2025)
- 2025 International Conference on Formal Methods in Software Engineering (FormaliSE 2025)
- 2025 ACM International Conference on Foundations of Software Engineering (FSE 2025)
- Tutorial track of the 2025 ACM International Conference on Foundations of Software Engineering (FSE 2025)
- 33rd IEEE International Requirements Engineering (RE 2025)
- 2024 International Conference on Formal Methods in Software Engineering (FormaliSE 2024)
- 2024 ACM International Conference on Foundations of Software Engineering (FSE 2024)
- 46th International Conference on Software Engineering (ICSE 2024)
- 40th International Conference on Software Maintenance and Evolution (ICSME 2024)
- 38th IEEE/ACM International Conference on Automated Software Engineering (ASE 2023)
- 26th International Conference on Fundamental Approaches to Software Engineering (FASE 2023), part of ETAPS
- New Ideas and Emerging Result (NIER) track of the 45th International Conference on Software Engineering (ICSE 2023)
- Workshop track of the 45th International Conference on Software Engineering (ICSE 2023)
- 32nd ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA 2023)
- 23rd International Conference on Runtime Verification (RV 2023)
- 37th IEEE/ACM International Conference on Automated Software Engineering (ASE 2022)
- 44th International Conference on Software Engineering (ICSE 2022)
- 22nd International Conference on Runtime Verification (RV 2022)
- 29th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2021)
- 9th International Conference on Formal Methods in Software Engineering (FormaliSE 2021)
- Workshops track of the 43rd International Conference on Software Engineering (ICSE 2021)
- 21st International Conference on Runtime Verification (RV 2021)
- 35th IEEE/ACM International Conference on Automated Software Engineering (ASE 2020)
- 2nd International Workshop on Automated and Verifiable Software System Development (ASYDE 2020)
- 20th International Conference on Web Engineering (ICWE 2020)
- 20th International Conference on Runtime Verification (RV 2020)
- Journal First track of the 34th IEEE/ACM International Conference on Automated Software Engineering (ASE 2019)
- International Workshop on Automated and Verifiable Software System Development (ASYDE 2019)
- 27th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2019)
- 7th International Conference on Formal Methods in Software Engineering (FormaliSE 2019)
- 41st International Conference on Software Engineering (ICSE 2019)
- 17th International Conference on Service Oriented Computing (ICSOC 2019)
- 19th International Workshop in OCL and Textual Modeling (OCL 2019)
- 11th Central European Workshop on Services and their Composition (ZEUS 2019)
- 33rd IEEE/ACM International Conference on Automated Software Engineering (ASE 2018)
- 6th International Conference on Formal Methods in Software Engineering (FormaliSE 2018)

- 16th International Conference on Service Oriented Computing (ICSOC 2018)
- 14th International Conference on integrated Formal Methods (iFM 2018)
- 18th International Workshop in OCL and Textual Modeling (OCL 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 of 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 of 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 of 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

Journals

- Communications of ACM (CACM), 2016
- Springer Computing (COMP), 2012
- ACM Computing Surveys (CSUR), 2020, 2021, 2025, 2026
- Springer Empirical Software Engineering (EMSE), 2024, 2025
- 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, 2025
- IOS Press Journal of Computer Security (JCS), 2012
- ACM Journal on Responsible Computing (JRC), 2024
- Special Issue of Journal of Research and Practice in Information Technology (JRPIT) on Dynamic and Declarative Business Processes, 2009
- Elsevier The Journal of Systems and Software (JSS), 2011, 2013, 2015, 2017, 2020, 2021, 2022, 2024, 2025, 2026
- Elsevier Science of Computer Programming (SCP), 2023, 2024
- Springer Service-oriented Computing and Applications (SOCA), 2010, 2013
- IEEE Software, 2011, 2014, 2015
- Springer Software and Systems Modeling (SOSYM), 2014
- Springer International Journal on Software Tools for Technology Transfer (STTT), 2020
- ACM Transactions on Autonomous and Adaptive Systems (TAAS), 2014
- ACM Transactions on Software Engineering and Methodology (TOSEM), 2008, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025
- IEEE Transactions on Service Computing (TSC), 2014
- IEEE Transactions on Dependable and Secure Computing (TDSC), 2017, 2025
- IEEE Transactions on Software Engineering (TSE), 2010, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023

Other

- Technical University of Munich - Faculty Recruitment and Career System, 2023
- Ministero dell'Università, Istruzione e Ricerca (Ministry of Education, University and Research), Italy. "PRIN 2017" program, 2018
- Reviewer of book publishing proposals for CRC Press, 2016, 2018, 2019, 2020

Conference/Workshop Organization

- Co-organizer, 3rd International Workshop on AI Solutions for Software Engineering Challenges in Financial Firms (FinanSE 2026)

- Proceedings Chair, 19th European Conference on Software Architecture (ECSA 2025)
- Co-organizer, 2nd International Workshop on Security for and by Model-Driven Engineering (SecureMDE 2020)
- Awards co-chair, 41st International Conference on Software Engineering (ICSE 2019)
- Co-organizer, International Workshop on Security for and by Model-Driven Engineering (SecureMDE 2018)
- Celebrations Media chair, 40th International Conference on Software Engineering (ICSE 2018)
- 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)
- Session Chair, 12th International Conference on Software Engineering and Formal Methods (SEFM 2014)
- 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

Keynote Presentations

- 04/2025 *Revisiting the triptychs of software engineering in the FinTech and RegTech realms*, 2nd International Workshop on AI Solutions for Software Engineering Challenges in Financial Firms (FinanSE 2025), co-located with the 47th International Conference on Software Engineering (ICSE 2025), Ottawa, ON, Canada
- 04/2024 *Signal-based temporal properties for cyber-physical systems: specification, monitoring, and diagnostics*, 6th Workshop on Models for Formal Analysis of Real Systems (MARS 2024) - affiliated with the European Joint Conferences on Theory and Practice of Software (ETAPS 2024), Luxembourg, Luxembourg

Invited University and Research Institute Presentations

- 06/2024 *Signal-based temporal properties for cyber-physical systems: specification, monitoring, and diagnostics*, Institute of Computer Science, Zurich University of Applied Sciences, Winterthur, Switzerland
- 06/2024 *Signal-based temporal properties for cyber-physical systems: specification, monitoring, and diagnostics*, Software Institute, Università della Svizzera italiana, Lugano, Switzerland
- 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

- 11/2025 *Advanced Software Testing for Cyber-Physical Systems*, 2025 Luxembourg Software Testing Event, Luxembourg, Luxembourg
- 11/2024 *Software Verification and Validation in the Age of GenAI*, 2024 Luxembourg Software Testing Event, Luxembourg, Luxembourg

- 06/2024 *FinTech and RegTech: A software engineering perspective by Domenico Bianculli*, Delft FinTech Summit, Mondai | House of AI, Delft, Netherlands
- 07/2021 *AI and RegTech: a software engineering perspective*, PwC AI Lab Knowledge Sharing session, Luxembourg, Luxembourg
- 12/2018 *Effective Injection Vulnerability Analysis of Java Web Applications*, companies participating in the “Fit 4 Start” acceleration program offered by Luxinnovation, Luxembourg, Luxembourg
- 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

- 12/2025 *Introduction to Quantum Software Engineering*. Tutorial at the 26th International Conference on Product-Focused Software Process Improvement (PROFES 2025), Salerno, Italy
- 07/2024 *Checking complex source code-level constraints using runtime verification*. 32nd ACM International Conference on the Foundations of Software Engineering (FSE 2024), Porto de Galinhas, Brazil
- 11/2023 *Signal-based requirement properties for CPS: specification, monitoring, and diagnostics*. Shonan meeting 204 “DevOps for Cyber-physical Systems”
- 10/2018 *Model-driven trace diagnostics for pattern-based temporal specifications*. 21st International Conference on Model Driven Engineering Languages and Systems (MODELS 2018), Copenhagen, Denmark
- 11/2017 *The Tale of Dr Jekyll and Mr Hyde in Pattern-based Specification Languages*. Dagstuhl Seminar 17462 “A Shared Challenge in Behavioural Specification”
- 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

Industry, Governmental Agency, and Funding Agency Presentations

- 09/2024 *Cybersecurity and Cyberdefence activities at SnT - University of Luxembourg*, National Cybersecurity Competence Center (NC3), Luxembourg
- 09/2017 *Run-time Monitoring, Verification and Compliance Checking of Business Workflows*. Ministry of the Civil Service, Luxembourg
- 04/2017 *Program Analysis and Constraint Solving for Vulnerability Detection*. University of Luxembourg - SnT Industrial Advisory Board meeting, Luxembourg
- 03/2017 *Run-time Monitoring, Verification and Compliance Checking of Business Workflows*. CrossLend GmbH site visit, Germany
- 06/2016 *Secure Data Management*, CHAMP Cargosystem, Luxembourg
- 07/2015 *Run-time Verification of Business Process Models*. Department of Media, Telecommunications and Digital Policy, Ministry of State, Luxembourg
- 06/2015 *Run-time Monitoring of Business Processes*. CREDOC - Fédération Royale du notariat belge, Belgium
- 04/2014 *Run-time Verification of Cloud-based Services*. EBRC site visit, Luxembourg
- 03/2013 *Towards model-based run-time verification of eGovernment business processes*. POLLUX Information & Matchmaking Day 2013, Fonds National de la Recherche Luxembourg

University Service

- 2023 – present Member, Faculty Education Committee, Faculty of Science, Technology and Medicine (FSTM), University of Luxembourg
- 07/2024 – 09/2025 Chair, Strategic Research Area on Cybersecurity, SnT Centre, University of Luxembourg
- 01/2023 – 07/2024 Deputy Chair, Strategic Research Area on Cybersecurity, SnT Centre, University of Luxembourg
- 2022 Member, Faculty Hiring Committee, Faculty of Science, Technology and Medicine (FSTM), University of Luxembourg
- 05/2022 – present Chair, Teaching Committee, SnT Centre, University of Luxembourg
- 2021 Member, Faculty Hiring Committee, SnT Centre, University of Luxembourg
- 03/2021 – 04/2022 Member, Teaching Committee, SnT Centre, University of Luxembourg
- 03/2020 – present Chair, Hiring and Supervision Board - IPBG INSTRUCT project, SnT Centre, University of Luxembourg

Professional Associations

- Association for Computing Machinery (ACM) - Member
- ACM Special Interest Group on Software Engineering (SIGSOFT) - Member
- Formal Methods Europe (FME) - Member
- Institute of Electrical and Electronics Engineers (IEEE) - Member

Languages

- Italian native
- English fluent
- French intermediate
- German beginner