

Curriculum Vitae

Maximiliano Cristiá

Contacts and Personal References

██
██
██

Education

- Licenciado en Matemática – Universidad Nacional de Rosario – Argentina.
- M.Sc. in Computer Science – Universidad de la República – Uruguay.
- PhD. in Informatics – Aix-Marseille Université – France.

Current Positions

Director of the Software Engineering Group at CIFASIS (French Argentine International Center for Information Systems and Sciences), Rosario, Argentina.

Professor of Software Engineering and Computer Security since 1998 at Universidad Nacional de Rosario, Argentina.

Faculty member at Universidad Nacional de Rosario since 1986.

Research Interests

Software verification, model-based testing, formal notations for software development, formal methods, set constraint solving, software architecture and design, tools to automate software development.

Publications

Journal articles

- [1] Maximiliano Cristiá and Gianfranco Rossi. Solving quantifier-free first-order constraints over finite sets and binary relations. *J. Autom. Reasoning*, 64(2):295–330, 2020.
- [2] Maximiliano Cristiá, Diego A. Hollmann, and Claudia S. Frydman. A multi-target compiler for CML-DEVS. *Simulation*, 95(1), 2019.
- [3] Carlos Luna, Gustavo Betarte, Juan Diego Campo, Camila Sanz, Maximiliano Cristiá, and Felipe Gorostiaga. A formal approach for the verification of the permission-based security model of android. *CLEI Electron. J.*, 21(2), 2018.
- [4] Maximiliano Cristiá, Joaquín Cuenca, and Claudia S. Frydman. Coverage criteria for set-based specifications. *RITA*, 22(2):316–335, 2015.
- [5] Maximiliano Cristiá, Gianfranco Rossi, and Claudia S. Frydman. Adding partial functions to constraint logic programming with sets. *TPLP*, 15(4-5):651–665, 2015.

- [6] Diego A. Hollmann, Maximiliano Cristiá, and Claudia Frydman. CML-DEVS: A specification language for DEVS conceptual models. *Simulation Modelling Practice and Theory*, 57:100 – 117, 2015.
- [7] Maximiliano Cristiá and Claudia S. Frydman. Formal and semi-formal verification of a web voting system. *IJWIS*, 11(2):183–204, 2015.
- [8] Diego A. Hollmann, Maximiliano Cristiá, and Claudia Frydman. A family of simulation criteria to guide DEVS models validation rigorously, systematically and semi-automatically. *Simulation Modelling Practice and Theory*, 49(0):1 – 26, 2014.
- [9] Maximiliano Cristiá, Pablo Albertengo, Claudia S. Frydman, Brian Plüss, and Pablo Rodríguez Monetti. Tool support for the Test Template Framework. *Softw. Test., Verif. Reliab.*, 24(1):3–37, 2014.
- [10] Alejandro Sartorio and Maximiliano Cristiá. First approximation to DHD design and implementation. *CLEI Electron. J.*, 12(3), 2009.

Book chapters

- [1] Norbert Giambiasi, Diego Llarrull, and Maximiliano Cristiá. Discrete-event modeling and simulation: Theory and applications. chapter System State Identification Using DEVS, pages 85–108. Taylor & Francis, 2010.

International conferences

- [1] Maximiliano Cristiá and Gianfranco Rossi. A set solver for finite set relation algebra. In Jules Desharnais, Walter Guttmann, and Stef Joosten, editors, *Relational and Algebraic Methods in Computer Science - 17th International Conference, RAMiCS 2018, Groningen, The Netherlands, October 29 - November 1, 2018, Proceedings*, volume 11194 of *Lecture Notes in Computer Science*, pages 333–349. Springer, 2018.
- [2] Maximiliano Cristiá, David Delahaye, and Catherine Dubois, editors. *Proceedings of the 3rd International Workshop on Sets and Tools co-located with the 6th International ABZ Conference, SETS@ABZ 2018, Southampton, UK, June 5, 2018*, volume 2199 of *CEUR Workshop Proceedings*. CEUR-WS.org, 2018.
- [3] Maximiliano Cristiá and Gianfranco Rossi. Programming in java with restricted intensional sets. In Cristiá et al. [2], pages 17–31.
- [4] Maximiliano Cristiá, Gianfranco Rossi, and Claudia Frydman. Using a set constraint solver for program verification. In *Proceedings 4th Workshop on Horn Clauses for Verification and Synthesis, HCVS at CADE 2017, Gothenburg, Sweden, 7th August 2017.*, 2017.
- [5] Maximiliano Cristiá and Gianfranco Rossi. A decision procedure for restricted intensional sets. In Leonardo de Moura, editor, *Automated Deduction - CADE 26 - 26th International Conference on Automated Deduction, Gothenburg, Sweden, August 6-11, 2017, Proceedings*, volume 10395 of *Lecture Notes in Computer Science*, pages 185–201. Springer, 2017.
- [6] Maximiliano Cristiá and Gianfranco Rossi. A decision procedure for sets, binary relations and partial functions. In Swarat Chaudhuri and Azadeh Farzan, editors, *Computer Aided Verification - 28th International Conference, CAV 2016, Toronto, ON, Canada, July 17-23, 2016, Proceedings, Part I*, volume 9779 of *Lecture Notes in Computer Science*, pages 179–198. Springer, 2016.
- [7] Maximiliano Cristiá, Gianfranco Rossi, and Claudia Frydman. First steps in integrating $\{log\}$ into Z/EVES. In *2nd International Workshop about Sets and Tools (SETS 2015)*, 2015.
- [8] Maximiliano Cristiá, Gianfranco Rossi, and Claudia S. Frydman. Helping programmers to adopt set-based specifications. In Bollin et al. [26], pages 3–10.
- [9] Maximiliano Cristiá. Why, how and what should be taught about formal methods? In Bollin et al. [26], pages 1–2.
- [10] Maximiliano Cristiá and Claudia S. Frydman. A functional verification of a web voting system. In Beniamino Murgante, Sanjay Misra, Ana Maria A. C. Rocha, Carmelo Maria Torre, Jorge Gustavo Rocha, Maria Irene Falcão, David Taniar, Bernady O. Apduhan, and Osvaldo Gervasi, editors, *ICCSA (1)*, volume 8579 of *Lecture Notes in Computer Science*, pages 640–655. Springer, 2014.

- [11] Maximiliano Cristiá and Gianfranco Rossi. Rapid prototyping and animation of Z specifications using $\{log\}$. In *1st International Workshop about Sets and Tools (SETS 2014)*, pages 4–18, 2014. Informal proceedings: <http://sets2014.cnam.fr/papers/sets2014.pdf>.
- [12] Maximiliano Cristiá, Joaquín Mesuro, and Claudia S. Frydman. Integration testing in the Test Template Framework. In Stefania Gnesi and Arend Rensink, editors, *FASE*, volume 8411 of *Lecture Notes in Computer Science*, pages 400–414. Springer, 2014.
- [13] Maximiliano Cristiá, Gianfranco Rossi, and Claudia S. Frydman. $\{log\}$ as a test case generator for the Test Template Framework. In Robert M. Hierons, Mercedes G. Merayo, and Mario Bravetti, editors, *SEFM*, volume 8137 of *Lecture Notes in Computer Science*, pages 229–243. Springer, 2013.
- [14] Maximiliano Cristiá and Claudia S. Frydman. Extending the Test Template Framework to deal with axiomatic descriptions, quantifiers and set comprehensions. In John Derrick, John A. Fitzgerald, Stefania Gnesi, Sarfraz Khurshid, Michael Leuschel, Steve Reeves, and Elvinia Riccobene, editors, *ABZ*, volume 7316 of *Lecture Notes in Computer Science*, pages 280–293. Springer, 2012.
- [15] Diego Hollmann, Maximiliano Cristiá, and Claudia S. Frydman. Adapting model-based testing techniques to DEVS models validation. In Gabriel A. Wainer and Pieter J. Mosterman, editors, *SpringSim (TMS-DEVS)*, page 6. SCS/ACM, 2012.
- [16] Maximiliano Cristiá and Claudia S. Frydman. Applying smt solvers to the test template framework. In Alexander K. Petrenko and Holger Schlingloff, editors, *MBT*, volume 80 of *EPTCS*, pages 28–42, 2012.
- [17] Maximiliano Cristiá, Diego Hollmann, Pablo Albertengo, Claudia S. Frydman, and Pablo Rodríguez Monetti. A language for test case refinement in the Test Template Framework. In Shengchao Qin and Zongyan Qiu, editors, *ICFEM*, volume 6991 of *Lecture Notes in Computer Science*, pages 601–616. Springer, 2011.
- [18] Maximiliano Cristiá, Pablo Albertengo, Claudia S. Frydman, Brian Plüss, and Pablo Rodríguez Monetti. Applying the Test Template Framework to aerospace software. In James L. Rash and Christopher Rouff, editors, *SEW*, pages 128–137. IEEE Computer Society, 2011.
- [19] Maximiliano Cristiá, Pablo Albertengo, and Pablo Rodríguez Monetti. Fastest: a model-based testing tool for the Z notation. In Franco Mazzanti and Gianluca Trentani, editors, *PTD-SEFM*, pages 3–8. Consiglio Nazionale della Ricerche, Pisa, Italy, 2010.
- [20] Maximiliano Cristiá, Pablo Albertengo, and Pablo Rodríguez Monetti. Pruning testing trees in the Test Template Framework by detecting mathematical contradictions. In José Luis Fiadeiro and Stefania Gnesi, editors, *SEFM*, pages 268–277. IEEE Computer Society, 2010.
- [21] Maximiliano Cristiá and Brian Plüss. Generating natural language descriptions of Z test cases. In John D. Kelleher, Brian Mac Namee, Ielka van der Sluis, Anja Belz, Albert Gatt, and Alexander Koller, editors, *INLG*, pages 173–177. The Association for Computer Linguistics, 2010.
- [22] Maximiliano Cristiá and Pablo Rodríguez Monetti. Implementing and applying the Stocks-Carrington framework for model-based testing. In Karin Breitman and Ana Cavalcanti, editors, *ICFEM*, volume 5885 of *Lecture Notes in Computer Science*, pages 167–185. Springer, 2009.
- [23] Maximiliano Cristiá. Formalizing the semantics of modular DEVS models with temporal logic. In *7ème Conférence on Modélisation, Optimisation et Simulation des Systèmes MOSIM 08*, 2008.
- [24] Maximiliano Cristiá. A TLA+ encoding of DEVS models. In *International Modeling and Simulation Multiconference*, pages 17–22, 2007.
- [25] Maximiliano Cristiá. Teaching formal methods in a third world country: what, why and how. In *Proceedings of the 2006 conference on Teaching Formal Methods: practice and experience*, TFM’06, pages 10–10, Swinton, UK, UK, 2006. British Computer Society.
- [26] Andreas Bollin, Tiziana Margaria, and Isabelle Perseil, editors. *Proceedings of the First Workshop on Formal Methods in Software Engineering Education and Training, FMSEE&T 2015, co-located with 20th International Symposium on Formal Methods (FM 2015), Oslo, Norway, June 23, 2015*, volume 1385 of *CEUR Workshop Proceedings*. CEUR-WS.org, 2015.

Latin American conferences

- [1] Gustavo Betarte, Juan Campo, Maximiliano Cristiá, Felipe Gorostiaga, Carlos Luna, and Camila Sanz. Towards formal model-based analysis and testing of Android's security mechanisms. In *XLIII Latin American Computing Conference, CLEI 2017, Córdoba, Argentina, September 4-8, 2017*.
- [2] Maximiliano Cristiá, Valdivino Santiago, and N.L. Vijaykumar. On comparing and complementing two MBT approaches. In *Test Workshop (LATW), 2010 11th Latin American*, pages 1–6, 2010.
- [3] Alejandro Sartorio and Maximiliano Cristiá. Primera aproximación al diseño e implementación de los DHD. In *Anales de la XXXIV Conferencia Latinoamericana de Informática*, Santa Fe, Argentina, 2008. CLEI.
- [4] Maximiliano Cristiá. Formal verification of an extension of a secure, compatible UNIX file system. In *Anales de la XXIX Conferencia Latinoamericana de Informática*, La Paz, Bolivia, 2003. CLEI.

National conferences

- [1] Maximiliano Cristiá, Joaquín Cuenca, and Claudia Frydman. Coverage criteria for logical specifications. In *Proceedings of the 8th Brazilian Workshop on Systematic and Automated Software Testing (SAST'14)*, pages 11–20, Maceió, Brazil, 2014.
- [2] Maximiliano Cristiá and Pablo Mata. Runtime enforcement of noninterference by duplicating processes and their memories. In *Workshop de Seguridad Informática WSEGI 2009*, Mar del Plata, Argentina, 2009. SADIO.
- [3] Maximiliano Cristiá, Gisela Giusti, and Felipe Manzano. The implementation of Lisex, a MLS linux prototype. In *Proceedings of the 6th ASSE (34th JAIIO)*, Rosario, Argentina, 2005. SADIO.