

# Curriculum Vitae

Alessandro Armando

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## Indirizzo

### Ufficio:

Dipartimento di Informatica, Bioingegneria, Robotica e Ingegneria dei Sistemi (DIBRIS)  
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## Servizio Militare

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## Titoli di Studio

- Abilitazione Scientifica Nazionale per Professore Ordinario nell' Aree Scientifiche:
  - 09/H1 - Sistemi di Elaborazione delle Informazioni
  - 01/B1 - Informatica.
- Dottore di Ricerca in Ingegneria Elettronica ed Informatica. Università degli Studi di Genova, 15 Settembre, 1994.
- Esame di Stato in Ingegneria Elettronica (Aprile 1989).
- Laurea in Ingegneria Elettronica, Università di Genova, Facoltà di Ingegneria (21/12/1988). Punteggio di Laurea: 110/110 e Lode. Il Commissione di Laurea ha altresì attribuito la dignità di pubblicazione alla tesi di laurea.

## Posizioni Accademiche e di Ricerca

- **Da maggio 2016:** Professore Ordinario al DIBRIS, Settore Scientifico-Disciplinare ING-INF/05.
- **Aprile 2011 - Dicembre 2016:** Responsabile dell'Unità di Ricerca Security & Trust (<http://st.fbk.eu>) presso il Center for Information Technology, Fondazione Bruno Kessler (FBK), Trento.
- **Settembre 2011 - Marzo 2014:** Direttore della TrentoRISE Research Area on Privacy, Security and Trust (<http://www.trentorise.eu>), Trento.
- **Gennaio 2004 - Aprile 2016** Professore Associato al (DIBRIS), Settore Scientifico-Disciplinare ING-INF/05.
- **Luglio 1995 - Dicembre 2003:** Ricercatore a tempo indeterminato presso il Dipartimento di Informatica, Sistemistica e Telematica dell'Università di Genova. Settore Scientifico-Disciplinare ING-INF/05.
- **Ottobre 1998 - Settembre 1999:** *visiting researcher* a INRIA Lorraine in Nancy (Francia) nel gruppo di ricerca *PROTHEO* diretto dalla Dott.ssa Hélène Kirchner.
- **Luglio 1994 - Giugno 1995:** *research fellow* presso il Department of Artificial Intelligence della University of Edinburgh (UK) nel *Mathematical Reasoning Group* diretto dal Prof. Alan Bundy.
- **Marzo-Giugno 1993:** *visiting researcher* presso il Department of Computer Science della Stanford University (California) nel *Formal Reasoning Group* diretto dal Prof. John McCarthy.
- **Aprile 1989 - Dicembre 1993:** consulente di ricerca presso l'Istituto per la Ricerca Scientifica e Tecnologica (IRST), Trento, nel *Mechanized Reasoning Group* diretto dal Prof. Fausto Giunchiglia. L'attività di ricerca si è svolta in periodi differenti per un totale di 16 mesi.

## Research Grants

- **Aprile 2010-Marzo 2013:** finanziamento triennale sul tema *Automated Security Analysis of Identity and Access Management Systems (SIAM)* finanziato dalla Provincia Autonoma di Trento nel contesto dell'Azione EU COFUND "Team 2009 - Incoming".
- **Luglio 1998:** Borsa di ricerca annuale per "Visita Scientifica di Lunga Durata" ("*Séjour Scientifique de Longue Durée*") del Ministero Francese degli Affari Esteri presso l'istituto di ricerca INRIA-Lorraine (*Institut National de Recherche en Informatique et en Automatique*) in Nancy (Francia).
- **Novembre 1994:** Borsa di ricerca di 6 months del Department of Artificial Intelligence of the University of Edinburgh (UK) nel contesto del *Human Capital and Mobility* Programme finanziato dalla Commissione Europea.
- **Gennaio 1994:** Borsa di specializzazione di 1 anno dell'Università di Genova presso la University of Edinburgh.
- **Novembre 1990-1993:** Borsa di studio triennale per lo svolgimento del Dottorato di Ricerca in Ingegneria Elettronica e Informatica presso l'Università di Genova.

## Lezioni e Relazioni su Invito

1. “Automated Security Analysis of the IoT Software Updates”, NECS PhD Winter School 2020, Fai della Paganella (Italy), January 21, 2020.
2. “Securing Distributed Applications: Introduction to Cryptographic Protocols”, 29th Summer PhD School of Information Engineering SSIE 2019, Bressanone (Italy), July 8-12, 2019.
3. “Formal Methods for Security: Challenges and Opportunities”, IACR Cryptology School on Security & Correctness in the Internet of Things 2017, Graz (Austria), May 8-12, 2017.
4. “Countering the Cyber Threat: Automated Vulnerability Assessment”, seminario internazionale “Il pericolo corre in rete la nuova frontiera della minaccia cibernetica” organizzato dalla Delegazione italiana presso l’Assemblea parlamentare della NATO in collaborazione con il Centro Studi Americani, Roma, Camera dei Deputati, 15 giugno 2017.
5. “Automated Security Analysis of Applications”, Workshop “Cyber Risk e Mercato Assicurativo”, Genova, May 5, 2017.
6. “Innovation in Cyber Security Research - Directions and Opportunities”, Workshop 4: “Technical Perspectives” at the NIAS2015 Cyber Security Symposium, Mons (Belgium), September 16, 2015.
7. “Automated Analysis of Security Protocols and Multi-party Web Applications” at the Interdisciplinary Centre for Security, Reliability and Trust, University of Luxembourg, September 18, 2015.
8. “Enforcing BYOD policies on Android Devices”, keynote speech at the Seminar on Roadmapping Cybersecurity Research and Innovation co-organized by the EU NIS platform WG3 and the European projects SECCORD and CAPITAL, Firenze, Oct 8, 2014.
9. Invited talk on “Android Security & Secure Meta-Markets”, NeSSoS Meeting, September 5, 2013, Bertinoro, Italy.
10. “The SPaCIoS Tool: property-driven and vulnerability-driven security testing for Web-based apps”, lecture at the 13th International School on Foundations of Security Analysis and Design (FOSAD’13), September 4, 2013, Bertinoro, Italy.
11. “Security and Privacy of Web-based Single Sign-On Protocols: Pitfalls and Solutions”, keynote speech at the IFIP Summer School on Privacy and Identity Management for Life, September 7, 2011, Trento, Italy.
12. “The Rewriting Approach to Decision Procedures”, lecture at the Summer School on Verification Technology, Systems & Applications (VTSA’11), September 23, 2011, Montefiore Institute (University of Liege), Belgium.
13. “Automatic Symbolic Analysis of Access Control Policies”, lecture at the Summer School on Verification Technology, Systems & Applications (VTSA’11), September 23, 2011, Montefiore Institute (University of Liege), Belgium.
14. “Building SMT-based Software Model Checkers: an Experience Report”, 7th International Symposium on Frontiers of Combining Systems, Trento, Italy, September 16-18, 2009.
15. “Formal Analysis of SAML 2.0 Web Browser Single Sign-On: Breaking the SAML-based Single Sign-On for Google Apps”, Istituto per la Ricerca Scientifica e Tecnologica, Trento, Italy, March 2, 2009.
16. “LTL Model Checking for Security Protocol Analysis”, Workshop on Logic and Information Security, September 22-28, 2008, Lorentz Center, Leiden, Holland.

17. “Verifica Automatica della Sicurezza delle Applicazioni Web: come abbiamo scoperto la vulnerabilità al servizio di Single Sign-On di Google”, Security Seminar after the Silicon Valley Study Tour 2008, Genova, Italy, November 4, 2008.
18. “LTL Model Checking for Security Protocol Analysis”, Workshop on Workshop Logic and Information Security, Leiden University, Holland, September 22-28, 2008.
19. “Software Model Checking: new challenges and opportunities for Automated Reasoning”, invited talk at Workshop on Practical Aspects of Automated Reasoning (PAAR-2008) and at the Workshop on Complexity, Expressibility, and Decidability in Automated Reasoning (CEDAR’08), Sydney, Australia, August 10, 2008.
20. “Automatic Validation of Internet Security Protocols”, lecture at the AEOLUS Summer School on Global Computing, Salerno, September 20, 2007.
21. “Big proof engines as little proof engines: new results on rewrite-based satisfiability procedures”, CISA Talk, Division of Informatics, University of Edinburgh, August 23, 2007.
22. “Decision Procedures for Automated Verification”, lecture at the Scuola Estiva di Logica, Palazzo Feltrinelli, Gargnano, September 5, 2006.
23. “Bounded Model Checking of C Programs using a SMT solver instead of a SAT solver”, Forum on Decision Procedures, Microsoft Research, Cambridge (UK), September 13, 2005.
24. “The AVISPA Project: Automatic Validation of Internet Security Protocols”, Security Area Advisory Group (SAAG) Meeting, in the context of the 62nd IETF Meeting, Minneapolis, March 5, 2005.
25. “Automatic SAT-Compilation of Protocol Insecurity Problems via Reduction to Planning”, Computer Science Department, University of Texas, November 11, 2002.
26. “Integration of Decision Procedures in Automated Reasoning” lecture series at the CALCULUMS Autumn School, Pisa, September 30 - Oct 1, 2002.
27. “An Overview of the AVISS Project”, Workshop on Specification, Analysis and Validation for Emerging Technologies (SAVE 2002), Copenhagen, Denmark, July 27, 2002.
28. “Proof-planning: an Overview”, DEIS - University of Bologna, July 2, 2002.
29. “A Rule-Based Approach to Specifying the Integration of Decision Procedures in Formula Simplification”, INRIA-Lorraine, Nancy, June 29, 2001.
30. “An Overview of the Open Mechanized Reasoning Systems Project”, Prosper Research Workshop, University of Cambridge, November 22, 1999.
31. “Integrating decision procedures with rewriting”, NASA Ames Research Center (California), November 7, 1997.
32. “Constraint Contextual Rewriting”, Institute for Algorithms and Cognitive Systems, University of Karlsruhe (Germany), 1997.

## Organizzazione di Avvenimenti Scientifici

Ho partecipato dei Comitati Direttivi dei seguenti eventi scientifici:

1. *International Workshop on Security Testing*, 2011-2013.
2. *Workshop on Semantic Computing for Security and Privacy*, sponsored by the IEEE Computer Society’s Technical Committees Security and Privacy (TCSP) and Semantic Computing (TC-

SEM), 2011-2013.

3. *International Conference on Automated Deduction* (ex officio, 2008-2009), <http://www.cadeconference.org/>.
4. *International Joint Conference on Automated Reasoning*, (2002-2007 and ex-officio 2008-2009), <http://www.ijcar.org/>.
5. the *First Order Theorem Proving* (FTP) Workshop Series. (Elected for the period 2001-2006), <http://www.csc.liv.ac.uk/FTP-WS/>
6. *Frontiers of Combining Systems* (FroCoS) Workshop Series (ex-officio 2001-2005), <http://combination.cs.uiowa.edu/frocos/>.
7. *CALCULEMUS Interest Group*. (Ex-officio from 1999 to 2001; elected for the period 2001-2004), <http://www.calculemus.net>.

Ho anche servito nei Comitati di Gestione della

1. COST Action IC0901: *Rich-Model Toolkit - An Infrastructure for Reliable Computer Systems* (2009-2013).

*General Chair* del seguente evento scientifico:

1. (with Giancarlo Pellegrino and Paolo Prinetto) *5th IEEE European Symposium on Security and Privacy* (IEEE EuroS&P 2020), September 8-11, 2020.

*Program Chair* dei seguenti eventi scientifici:

1. (with Hilarie Orman) *2nd Workshop on Semantic Computing for Security and Privacy* (WSCS'12), May 24, 2012.
2. (with Maria Paola Bonacina) *Rich-Model Toolkit Meeting*, Torino, Italy October 3-4, 2011.
3. (with G. Lowe) *Joint Workshop on Automated Reasoning for Security Protocol Analysis and Issues in the Theory of Security* (ARSPA-WITS 2010), Cyprus, March 2010.
4. (with P. Baumgartner and G. Dowek) *4th International Joint Conference on Automated Reasoning* (IJCAR 2008), Sidney, August 11-16, 2008.
5. (with A. Cimatti) *3rd Workshop on Pragmatics of Decision Procedures in Automated Reasoning* (PDPAR'05), Edinburgh (UK), July 12, 2005.
6. (with Luca Viganò) *Automated Reasoning for Security Protocols Analysis* (ARSPA'04), Cork, Ireland, July 4, 2004.
7. *4th International Workshop on Frontiers of Combining Systems* (FroCoS 2002), Santa Margherita Ligure, April 8-10, 2002.
8. (with Tudor Jabelean) *7th Symposium CALCULEMUS: Systems for Integrated Computation and Deduction* held in Trento on July 11-12, 1999 in the context of the 1999 Federated Logic Conference (FLoC'99).

Membro del Comitato di Programma dei seguenti eventi scientifici:

1. *31st IEEE Computer Security Foundations Symposium* (CSF 2018), 2018.
2. *23rd ACM Symposium on Access Control Models and Technologies* (SACMAT), 2018-20 (3 editions).
3. *Italian Conference on Cybersecurity* (ITASEC), 2017-2020 (4 editions).
4. *30th AAAI Conference on Artificial Intelligence* (AAAI-16), 2016.
5. *4th International Seminar on Program Verification, Automated Debugging and Symbolic Com-*

- putation (PAS 2015) Beijing, China, October 21-23, 2015.
6. *Conference on Principles of Security and Trust (POST)*, 2015 and 2016 (2 editions).
  7. *10th International Symposium on Trustworthy Global Computing (TGC)*, 2015.
  8. *International Conference on Security and Cryptography (SECRYPT)*, 2013, 2014, and 2015 (3 editions).
  9. *8th International Conference on Availability, Reliability and Security (AREs)* 2013).
  10. *1st Workshop on Automated Reasoning in Security (ARSEC 2013)*, 2013.
  11. *3rd IFIP WG 11.6 Working Conference on Policies & Research in Identity Management (IFIP IDMAN 2013)*.
  12. *European Symposium on Research in Computer Security (ESORICS)*, 2012, 2013, and 2015 (3 editions).
  13. *International Workshop on Security and Trust Management (STM)*, 2011 and 2012 (2 editions).
  14. *Theory of Security and Applications*, 2011.
  15. *Joint Workshop on Automated Reasoning for Security Protocol Analysis and Issues in the Theory of Security (FCS-ARSPA-WITS)*, 2010.
  16. *Future Internet Symposium (FIS)*, 2008 and 2009 (2 editions).
  17. *IEEE/ACM International Conference on Automated Software Engineering (ASE)*, 2008, 2009, 2010 (3 editions).
  18. *International Workshop on Computational Intelligence in Security for Information Systems (CI-SIS)*, 2008 and 2009 (2 editions).
  19. *International Conference on Artificial Intelligence and Symbolic Computation (AISC)*, 2008 and 2010 (2 editions).
  20. *Joint Workshop on Foundations of Computer Security, Automated Reasoning for Security Protocol Analysis and Issues in the Theory of Security (FCS-ARSPA-WITS)*, 2008.
  21. *International Symposium on Formal Methods (FM)*, 2008.
  22. *International Symposium on Frontiers of Combining Systems (FroCoS)*, 2002, 2005, and 2007 (3 editions).
  23. *International Symposium on the Integration of Symbolic Computation and Mechanized Reasoning (CALCULEMUS)*, 2000, 2001, 2002, 2005, 2007 (5 editions).
  24. *Workshop on the Foundations of Computer Security and Automated Reasoning for Security Protocol Analysis (FCS-ARSPA)*, 2006, 2007 (2 editions).
  25. *International Conference on Rewriting Techniques and Applications (RTA)*, 2007.
  26. *Workshop on Information and Computer Security (ICS)*, 2006.
  27. *International Workshop on Pragmatics of Decision Procedures in Automated Reasoning (PDPAR)*, 2003, 2004, 2005 and 2006 (4 editions).
  28. *International Conference on Mathematical Knowledge Management (MKM)*, UK.
  29. *International Joint Conference on Automated Reasoning (IJCAR)*, 2004, 2006, 2008, 2010 (4 editions).
  30. *International Workshop on First-Order Theorem Proving (FTP)*, 2005.
  31. *IJCAI Workshop on Agents and Automated Reasoning*, 2003.
  32. *International Conference on Automated Deduction (CADE)*, 2003, 2011, 2013, and 2015 (4 editions).

33. *Workshop on Specification, Analysis and Validation for Emerging Technologies (SAVE)*, 2002.
34. *International Workshop on Strategies in Automated Deduction (STRATEGIES)*, 2001.
35. *Workshop Future Directions in Automated Reasoning (FUTURE)*, 2001.
36. *Conference Automated Deduction: Putting Theory into Practice*, 2000.

## Progetti di Ricerca

Presidente del Comitato Scientifico:

- Fondazione SERICS ([www.serics.eu](http://www.serics.eu)). La Fondazione SERICS è soggetto attuatore, nel ruolo di *hub*, del Partenariato Estero SERICS (Security and Right in the Cyber Space) finanziato a seguito della partecipazione all’Avviso Pubblico “per la presentazione di Proposte di intervento per la creazione di “Partenariati estesi alle università, ai centri di ricerca, alle aziende per il finanziamento di progetti di ricerca di base” – nell’ambito del Piano Nazionale di Ripresa e Resilienza, Missione 4 “Istruzione e ricerca” – Componente 2 “Dalla ricerca all’impresa” – Investimento 1.3, finanziato dall’Unione europea – NextGenerationEU – Avviso nr. 341 del 15.3.2022 (d’ora in poi Avviso Pubblico). Al PE SERICS partecipano 18 enti di ricerca (inclusi 11 atenei e il CNR) e alcune tra le principali aziende nazionali (Leonardo, Fincantieri, TIM, ENI, Intesa San Paolo, Deloitte) per un finanziamento complessivo di 113 milioni di Euro.

Coordinatore scientifico dei seguenti progetti di ricerca:

- *Advanced Research Workshop - “New Generation CERT: from Response to Readiness - Strategy and Guidelines”*, held at the School of Telecommunications of the Italian Armed Forces, Chiavari (Italy), March 28-30, 2017. Co-Directors: A. Armando and Mr. Marc Henauer, (Reporting and Analysis Centre for Information, Bern, Switzerland). Funded by NATO in the framework of the NATO Science for Peace and Security (SPS) Programme.
- *Security Threat Identification and Testing (STIATE)* funded by the European Institute of Innovation and Technology (EIT ICT Labs) in the context of Action Line on Privacy, Security and Trust 2014. Partner institutions: FBK (coordinator), SAP, Reply, and DFKI. Duration: 12 months, starting on January 1, 2014.
- *Formal specification of security model for the High Assurance Automated Guard*, funded by the NATO Communications and Information Agency. Duration: 6 months, starting on July 15, 2012 and then renewed in 2013 (6 months) and 2014 (8 months).
- *BYODroid Demonstrator*, funded by NATO Communications and Information (NCI) Agency. Duration: 3 months, starting on March 1, 2015.
- *Mobile Application Verification Cluster (MAVERIC)*, funded by Poste Italiane. Duration: 24 months, starting on January 1, 2014.
- *Integrating automated reasoning in model checking: towards push-button formal verification of large-scale and infinite-state systems (20079E5KM8)* funded by the Italian Ministry of Scientific and Technological Research in the context of the PRIN 2007 Programme. Partner Institutions: DIST, Università di Genova (Prof. A. Armando, coordinator); Università di Napoli (Prof. M. Benerecetti); Università di Trento (Prof. R. Sebastiani); Università di Verona (Prof. M. P. Bonacina). Duration: 24 months, starting on September 23, 2008.
- IST FET Open Project *AVISPA: Automated Validation of Internet Security Protocols and Applications (IST-2001-39252)* funded by the European Commission in the context of the 5th Frame-

work Programme. Partner Institutions: DIST, Università di Genova (Prof. A. Armando, coordinator); Eidgenoessische Technische Hochschule Zurich (ETHZ), Switzerland (Prof. D. Basin); INRIA Lorraine, France (Dr. M. Rusinowitch); Siemens AG, Munich, Germany (Dr. J. Cuelar). URL: [www.avispa-project.org](http://www.avispa-project.org). Duration: 30 months, starting on January 1, 2003. In 2006 the AVISPA Project received the nomination for the *Descartes Prize for excellence in scientific collaborative research*. (It was one of the 13 projects shortlisted out of 65 submissions.) This prize is described in the Descartes Prizes web page (<http://cordis.europa.eu/science-society/descartes/home.html>) in the following way:

*“This prize is awarded to teams of researchers who have achieved outstanding scientific or technological results through collaborative research in any field of science, including the social sciences, humanities and economics.”*

- *Verifica automatica dei protocolli di sicurezza* (RBAU01P5SS) funded by the Italian Ministry of Scientific and Technological Research in the context of the FIRB 2001 Programme. Partner Institutions: DIST, Università di Genova (Prof. A. Armando, coordinator); University of Trento (Prof. F. Massacci); University of Napoli (Prof. M. Benerecetti). Duration: 36 months starting from July 1, 2003.

Responsabile scientifico di Unità di Ricerca nei seguenti progetti di ricerca:

- *Special projects for advanced research and technology in Europe (SPARTA)*, project number 786727 (call H2020-SU-ICT-2018-2 “Establishing and operating a pilot for a Cybersecurity Competence Network to develop and implement a common Cybersecurity Research & Innovation Roadmap”), funded by the EU in the context of H2020 Programme. Grant agreement No 830892. Partner institutions: CEA (coordinator), CINI-Cybersecurity National Lab together with 42 other institutions. Duration: 36 months from Feb 1, 2019.
- *Integrated Framework for Predictive and Collaborative Security of Financial Infrastructures (FINSEC)*, Innovation Action, project number 786727 (call CIP-2016-2017-2), funded by the EU in the context of H2020 Programme. Partner institutions: GFT (coordinator), CINI-Cybersecurity National Lab together with 20 other entities. Duration: 36 months from May 1, 2018.
- *UNAVOX – Poligono Virtuale Cyber*, funded by the Italian Ministry of Defence in the context of *Piano Nazionale della Ricerca Militare (PNRM)*. Partner institutions: Leonardo (coordinator), Selta, Aizoon, Systems Management, Minded Security, University of Genova, University of Rome - La Sapienza, University of Modena e Reggio Emilia, 2018.
- *Filiera Sicura* (Securing the Supply Chain of Domestic Critical Infrastructures from Cyber Attacks) funded by CISCO. Partner institutions: U. of Rome “La Sapienza” (coordinator), U. of Genova, U. of Napoli “Federico II”, U. of Trento, U. of Venice “Ca’ Foscari”, Politecnico di Milano, Politecnico di Torino, IMT School for Advanced Studies Lucca. Duration: 36 months, starting on January, 2017.
- *FIDES* (Federated Identity Management in Europe) funded by the European Institute of Innovation and Technology (EIT ICT Labs) in the context of Action Line on Privacy, Security and Trust 2015. Partner institutions: Poste Italiane (coordinator), FBK, Reply, DFKI, and Politecnico di Torino, Eötvös Loránd University, Telecom Italia, TNO. Duration: 12 months, starting on January 1, 2015.
- *Security Horizons* (2010XSEMLC\_006), funded by the Italian Ministry of Scientific and Technological Research in the context of the PRIN 2011 Programme.
- *Secure Provision and Consumption in the Internet of Services (SPaCIoS)*, STREP project number

257876, funded by the EU in the context of the 7th Framework Programme, THEME ICT-1-1.4 – Secure, dependable and trusted Infrastructures. Partner Institutions: U. of Verona (coordinator), U. of Genova, ETHZ, SAP Research, Siemens AG, Karlsruhe Institute of Technology, Institut Polytechnique de Grenoble. Duration: 36 months from October 11, 2010.

- *Automated Validation of Trust and Security of Service-oriented Architectures (AVANTSSAR)*, STREP project number 216471, funded by the EU in the context of the 7th Framework Programme, THEME ICT-1-1.4 – Secure, dependable and trusted Infrastructures. Partner Institutions: U. of Verona (coordinator), U. of Genova, ETHZ, SAP Research, Siemens AG, INRIA-Lorraine, IRIT, OpenTrust, Institute e-Austria Timișoara. Duration: 36 months from January 1, 2008.
- *Sistema INTEgrato per la Sicurezza ad Intelligenza diStribuita (SINTESIS)*, *Distretto Tecnologico Ligure*. Duration: 18 months from March 1, 2009.
- *Decision Procedures for Software Model Checking* (2003097383-002) funded by the Italian Ministry of Scientific and Technological Research in the context of the PRIN 2003 Programme. Duration: 24 months from November 20, 2003.
- *AVISS: Automated Verification of Infinite State Systems* (IST-2000-26410) funded by the European Commission in the context of the *Future and Emerging Technologies* Programme of the 5th Framework Programme. Duration: 12 months from May 1, 2001.
- *Integration of Decision Procedures in Automated Deduction* in collaboration with Dr. Michael Rusinowitch (INRIA Lorraine). Funded by the French Ministry of Foreign Affairs and CRUI (*Conferenza dei Rettori delle Università Italiane*) through the Italian Ministry of Scientific and Technological Research (MURST) in the context of the Programme *Galileo 1999*.
- Research Training Network *CALCULEMUS: Systems for Integrated Computation and Deduction* (HPRN-CT-2000-00102), Funded by the European Commission in the context of the Programme *Improving Human Research Potential and the Socio-Economic Knowledge Base* of the 5th Framework Program. Duration: 48 months from January 1, 2000.
- *The Use of Metatheoretic and Analogical Reasoning in Proof Planning* in collaboration with Prof. Jörg Siekmann of the Department of Computer Science of the University of Saarbrücken (Germania). Funded by CRUI (*Conferenza dei Rettori delle Università Italiane*) and DAAD in the context of the Programme *Vigoni 1996*.
- *Automation of Program Synthesis in Proof-Planning* in collaboration with Prof. Alan Bundy of the Department of Artificial Intelligence of the University of Edinburgh. Funded by CRUI (*Conferenza dei Rettori delle Università Italiane*) and the British Council in the context of the British-Italian Cooperation Programme for Research and High Education (1996 Edition).
- *Reflective Architectures for Automated Deduction* in collaboration with Prof. Alan Bundy (University of Edinburgh), Prof. David Basin (Max-Planck Institut für Informatik – Saarbrücken), Prof. Fausto Giunchiglia (University of Trento). Funded by CNR (*Consiglio Nazionale delle Ricerche*).

## Progetti di Alta Formazione

Coordinatore scientifico dei seguenti progetti:

- *Leonardo-UNIGE Cybersecurity Scholarship Project* funded by Leonardo Company, academic years: 2020-21, 2021-22 (2 editions). The project offers students an innovative Cybersecurity

training path and scholarships (borse di studio) through innovative and engaging hands-on activities.

- *Boeing-UNIGE Scholarship Project* funded by the Boeing Company, academic years: 2017-18, 2018-19, 2019-20. The project offers students an innovative Cybersecurity training path and scholarships (borse di studio) through innovative and engaging hands-on activities.
- *A European Industrial Doctorate on Security and Trust of Next Generation Enterprise Information Systems (SECENTIS)* funded by the European Commission in the context of the 2012 PEOPLE Work Programme. Partner Institutions: FBK and SAP AG (main beneficiaries), University of Trento and TrentoRISE (associated partners). Duration: 48 months, starting on April 1, 2013.
- International project for the co-tutoring of PhD students and mutual recognition of the degree in the area of integration of Deduction and Symbolic Computation. The project has been funded by the Italian Ministry of Scientific and Technological Research in the context of the Program of Internationalisation of the Italian University System (D.M. 21.6.99, art. 7 - Internazionalizzazione, URL: [interlink.murst.it](http://interlink.murst.it)). Duration: 4 years starting from November 1, 2000.

## Brevetti

- L. Compagna, A. Sudhodanan, R. Carbone, A. Armando. Dynamic Analysis Security Testing of Multi-Party Web Applications Via Attack Patterns. Publication number: US 20170109534 A1, April 20, 2017.

## Insegnamento

Titolare dei seguenti insegnamenti:

- **2019–present** (3 academic years) *Cyber Security Systems* (20h), MBA in Cybersecurity Management, Military University of Technology, Warsaw, Poland.
- **2014–present** *Cryptographic Protocols* and *Web Security* courses, Master Universitario di II Livello on “Cyber Security and Data Protection” and Master Universitario di II Livello on “Cyber Security and Critical Infrastructures Protection”.
- **2021–2022 (1 academic year)** *Sistemi Operativi*, 6 CFU, MSc in Computer Engineering, University of Genova.
- **2016–2021 (4 academic years)** *Calcolatori Elettronici (Modulo: Sistemi Operativi)*, 6 CFU, MSc in Computer Engineering, University of Genova.
- **2014–present (6 academic years)** *Computer Security*, 9 CFU, MSc in Computer Engineering, University of Genova.
- **2010–2013 (3 academic years)** *Sistemi Operativi e Sicurezza Informatica*, (Operating Systems and Computer Security), 9 CFU, MSc in Computer Engineering, University of Genova.
- **2007–2009 (2 academic years)** *Tecnologie Software per il Web 1* (Software Technologies for the Web 1), 6 CFU, MSc in Computer Engineering, University of Genova.
- **2005–2009 (4 academic years)** *Sicurezza Informatica 1* (Computer Security 1), MSc in Com-

puter Engineering, University of Genova.

- **2005–2007 (2 academic years)** *Fondamenti di Informatica* (Fundamentals of Informatics), MSc in Mechanical Engineering, University of Genova.
- **2003–2005 (2 academic years)** *Internet e E-Government* (Internet and E-Government), MSc in Science of Communication, University of Genova.
- **1999–2009 (10 academic years)** *Intelligenza Artificiale 1* (Artificial Intelligence 1), MSc in Computer Engineering, University of Genova.
- **2001–2002 (1 academic year)** *Fondamenti di Informatica* (Fundamentals of Computer Science), MSc in Telecommunication Engineering, University of Genova.
- **1999–2001 (2 academic years)** *Fondamenti di Informatica – II Modulo* (Fundamentals of Computer Science – Module 2), MSc in Computer Engineering and MSc in Telecommunication Engineering, University of Genova.
- **1995–1999 (4 academic years)** *Fondamenti di Informatica* (Fundamentals of Computer Science), MSc in Computer Engineering and MSc in Telecommunication Engineering, University of Genova.
- **1995–98 (3 academic years)** *Fondamenti di Informatica* (Fundamentals of Computer Science), course of “Diploma Universitario” in Logistics and Production Engineering, University of Genova.

## Supervisione

Relatore di più di 30 tesi di laurea. Sono anche stato *PhD supervisor* delle seguenti persone:

- Metoui Nadia, “Privacy-Aware Risk-Based Access Control Systems”, University of Trento, 2018.
- Avinash Sudhodanan, “Black-Box Security Testing of Browser-Based Security Protocols”, University of Trento, 2017. Current position: post-doctoral researcher at IMDEA Software Institute, Madrid, Spain.

*By applying the techniques and tools developed in his PhD, A. Sudhodanan discovered several serious security flaws in web applications developed by prominent vendors (Yahoo, Microsoft, SAP, Stripe, Pinterest, Xiaomi). In recognition of the service provided by responsibly disclosing the vulnerabilities A. Sudhodanan received monetary awards (Bug Bounties) totalling \$10,000 and a number of honorable mentions.*

- Luca Verderame, “A Framework for Automatic Security Checking of Mobile Applications”, University of Genova, 2016. Current position: CEO of Talos Security, Italy.
- Tuan Anh Truong, “Efficient Automated Security Analysis of Complex Authorization Policies”, University of Trento, 2015.
- Serena Elisa Ponta, “Formal Specification and Automatic Analysis of Security-sensitive Business Processes”, University of Genova, 2011. Current position: Researcher at SAP Research, Sophia Antipolis.
- Roberto Carbone, “LTL Model-Checking for Security Protocols”, University of Genova 2009. The PhD thesis has been awarded the the CLUSIT Prize in 2009. Current position: researcher at FBK, Trento.

- Lorenzo Platania, “Software Verification using Satisfiability Modulo Theories”, University of Genova, 2009.
- Jacopo Mantovani, “Automatic Software Verification for Robotics”, University of Genova, 2007.
- Pierre Ganty, “The Fixpoint Checking Problem: An Abstraction Refinement Perspective”, 2007. Joint supervision with Prof. Prof. Jean-François Raskin (Computer Science Department, Université Libre de Bruxelles) and Prof. Giorgio Delzanno (DISI, University of Genova) in the context of a bilateral agreement between the University of Genova and the Université Libre de Bruxelles. Current position: Assistant Research Professor at IMDEA Software Institute, Madrid.
- Luca Compagna, “SAT-based Model Checking of Security Protocols”, 2004. Joint supervision with Dr. Alan Smaill (Division of Informatics of the University of Edinburgh) in the context of a bilateral agreement between the University of Genova and the University of Edinburgh. Current position: Senior Researcher at SAP Research, Sophia Antipolis.
- Silvio Ranise, “Integration of Decision Procedures in Automated Theorem Provers”, 2001. Joint supervision with Dr. Michael Rusinowitch of INRIA Lorraine (Nancy, France) in the context of a bilateral agreement between the University of Genova and the University of Henri Poincaré–Nancy 1. Current position: Senior Researcher at FBK, Trento.
- Currently advisor of 4 PhD students at the University of Trento and 3 PhD students at the University of Genova.

## Attività Accademica

- Coordinatore del Dottorato “Sicurezza, Rischio e Vulnerabilità”, Università di Genova (<https://sicurezza.unige.it/dottorato>).
- Presidente del Comitato di Gestione per la realizzazione di progetti di intervento di Alta Formazione presso la Scuola Telecomunicazione delle FF.AA. di Chiavari (STELMILIT): Master Universitari di I livello, Corsi di Perfezionamento e di Formazione Specialistica nel settore della Cyber Defence e della Digital Forensics per il quadriennio 2021-24.
- Direttore del Master Universitario di I Livello in “Digital Forensics e Tecnologie Cyber”, a.a. 2017/2018, master congiunto tra l’Università di Modena e Reggio Emilia e l’Università di Genova (<https://cris.unimore.it/stelmilit/masterDFTC.php>).
- Presidente del Comitato di Gestione del Master Universitario di II Livello “Cyber Security and Data Protection”, anni accademici 2014/2015 and 2016/2017, Università di Genova ([www.MasterCyberSecurity.it](http://www.MasterCyberSecurity.it)).
- Vice Direttore del Laboratorio Nazionale di Cyber Security (<http://www.consorzio-cini.it/index.php/en/national-laboratories-left/lab-cyber-security>) del Consorzio Inter-universitario Nazionale per l’Informatica (CINI).
- Vice Direttore del Dipartimento di Informatica, Sistemistica e Telematica dell’Università di Genova dal 12/2/2008 al 30/6/2009.
- Membro della Giunta di Dipartimento del DIST from 12/2/2008 to 30/6/2009.
- Membro della Giunta di Facoltà della Facoltà di Ingegneria dell’Università di Genova per il period 2001-2004. (Electto dalla Consiglio di Facoltà il 16/11/2001.)
- Membro del Centro Servizio della Facoltà di Ingegneria dell’Università di Genova per il periodo 2001-2004.

- Member del Comitato per le Relazioni Internazionali della Facoltà di Ingegneria dell'Università di Genova.

## Spin-off Universitari

- Talos ([www.talos-security.com](http://www.talos-security.com)), fondata nel febbraio 2016 insieme a due ricercatori e a uno studente di dottorato dell'Università di Genova. Talos sviluppa e commercializza APPROVER, uno strumento software per la valutazione automatica della sicurezza informatica delle applicazioni per dispositivi mobili.

## Attività Professionali

- Membro e presidente del panel di esperti per la valutazione dei progetti di innovazione, ricerca industriale e sviluppo sperimentale “TEMATICA: Cybersecurity”, Bandi 2021/1 e 2021/2, Centro di Competenza Cyber 4.0, 2021.
- Fondirigenti, Sviluppo di quattro “pillole” per il progetto Microlearning Rd4 (<https://ready4.fondirigenti.it/>) sugli argomenti:
  - Modulo (livello Intro) Cos'è il cyber-risk (2 Sezioni: Dalla protezione degli uomini dalle macchine alla protezione delle macchine dagli uomini / Esempi concreti di attacchi cyber: conseguenze, vulnerabilità, ...)
  - Modulo (livello intro) Gestione del cyber-risk e comportamenti del personale (2 sezioni: Non solo software / Buone pratiche aziendali)
  - Modulo (livello medio) Proteggersi dal cyber-risk (3 sezioni: Sistemi informatici di protezione dal cyber-risk / Proteggersi dal cyber-risk: comportamenti umani da correggere / Proteggersi dal cyber-risk: strumenti del mercato assicurativo)
  - Modulo (livello avanzato) Cyber-security (2 sezioni: Tecnologie evolute per la cyber-security / Strategie complessive di protezione)
- Siemens-ORSI, Ispezione del codice di un sistema esperto, Boston (USA), 2003.
- ABB, Corsi di aggiornamento su Network Security (2005) e Cybersecurity (2019).
- START4.0 Competence Center (<https://www.start4-0.it/>), member of the Scientific Technical Committee.

# Lista delle Pubblicazioni

Alessandro Armando

Maggio 2023

## Tesi

- [T1] A. Armando and A. Cimatti. Generazione Automatica di Modelli Dinamici per Manipolatori Meccanici. Tesi di Laurea, DIST - Università di Genova, 21 Dicembre 1988. Tesi di Laurea in Ingegneria Elettronica con dignità di stampa.
- [T2] A. Armando. *Architetture Riflessive per la Deduzione Automatica*. Tesi di Dottorato, DIST - Università di Genova, 15 Settembre 1994. Tesi di Dottorato per il conseguimento del titolo di Dottore di Ricerca in Ingegneria Elettronica ed Informatica.

## Attività Editoriali

- [E1] A. Armando and T. Jabelean. Special Issue on “Systems for Integrated Computation and Deduction” of the *Electronic Notes in Theoretical Computer Science* (Elsevier), Volume 23, Issue 3, 1999.
- [E2] A. Armando and T. Jabelean. Special Issue on “Integrated Symbolic Computation and Automated Deduction” of the *Journal of Symbolic Computation* (Academic Press), Volume 32, No. 4, September 1, 2001.
- [E3] A. Armando. Proceedings of the 4th “International Workshop on Frontiers of Combining Systems” (FroCoS 2002) held in Santa Margherita Ligure, April 8-10, 2002. Published as Volume 2309 of the *Lecture Notes in Artificial Intelligence*, Springer Verlag, 2002.
- [E4] A. Armando and L. Viganò. Proceedings of the 1st Workshop on “Automated Reasoning for Security Protocol Analysis (ARSPA’04)”. Special issue of the *Electronic Notes in Theoretical Computer Science*, Volume 125, Issue 1, 3 March 2005.
- [E5] A. Armando and A. Cimatti. Post-workshop proceedings of the 3rd Workshop on “Pragmatics of Decision Procedures in Automated Reasoning (PDPAR’05)”. Special Issue of the *Electronic Notes in Theoretical Computer Science*, Volume 144, Issue 2, 2006.
- [E6] A. Armando, D. Basin, J. Cuellar, M. Rusinowitch, and L. Viganò. Special Issue of the *Journal of Automated Reasoning* on “Automated Reasoning for Security Protocol Analysis”, Volume 36, Numbers 1-2, 2006.
- [E7] A. Armando and C. Ringeissen. Special Issue on “Combining Logical Systems” of the journal *Information and Computation*, Volume 204, Issue 10, 2006.
- [E8] A. Armando, P. Baumgartner, and G. Dowek. Proceedings of the 4th International Joint Conference of Automated Reasoning (IJCAR 2008), Sydney, Australia, August 12-15, 2008. *Lecture Notes in Computer Science*, Vol. 5195.

- [E9] A. Armando, P. Baumgartner, and G. Dowek. Special Issue on *Selected Papers from the 4th International Joint Conference of Automated Reasoning (IJCAR 2008)* of the *Journal of Automated Reasoning*, Vol. 45, Number 2, 2010.
- [E10] A. Armando and G. Lowe. Proceedings of the Joint Workshop on Automated Reasoning for Security Protocol Analysis and Issues in the Theory of Security (ARSPA-WITS 2010), Paphos, Cyprus, March 27-28, 2010. *Lecture Notes in Computer Science*, Vol. 6186, Vol. 45, Number 2, 2010.

## Capitoli di Libro

- [BC1] A. Armando, M. Kohlhase and S. Ranise. Communication Protocols for Mathematical Services based on KQML and OMRS. In *Symbolic Computation and Automated Reasoning*. M. Kerber and M. Kohlhase, editors, pag. 33-48. A K Peters Publisher, Natick, Massachusetts, 2001. Invited paper.
- [BC2] A. Armando and D. Zini. Interfacing Computer Algebra and Deduction Systems via the Logic Broker Architecture. In *Symbolic Computation and Automated Reasoning*. M. Kerber and M. Kohlhase, editors, pag. 49-64. A K Peters Publisher, Natick, Massachusetts, 2001. Invited paper.
- [BC3] A. Armando, L. Compagna, and S. Ranise. Rewrite and Decision Procedure Laboratory: Combining Rewriting, Satisfiability Checking, and Lemma Speculation. Invited paper on the 'Festschrift' in honor of Joerg Sieckmann, *Lecture Notes in Computer Science*, Volume 2605, Jan 2005, pp. 30-45, Springer Verlag.
- [BC4] A. Armando, C. Castellini, E. Giunchiglia, F. Giunchiglia, A. Tacchella. SAT-Based Decision Procedures for Automated Reasoning: a Unifying Perspective. Invited paper on the 'Festschrift' in honor of Joerg Sieckmann, *Lecture Notes in Computer Science*, Volume 2605, Jan 2005, pp. 45-58, Springer Verlag.
- [BC5] A. Armando. Building SMT-based Software Model Checkers: an Experience Report. In the Proceedings of the 7th International Symposium on Frontiers of Combining Systems, Trento, Italy, September 16-18, 2009. *Lecture Notes on Artificial Intelligence* series no. 5749. Invited paper.
- [BC6] A. Armando, R. Carbone, L. Compagna, and G. Pellegrino. Automatic Security Analysis of SAML-based Single Sign-On Protocols. In "Digital Identity and Access Management: Technologies and Frameworks", R. Sharman, S. Das Smith and M. Gupta, editors, IGI Global, 2012. Invited paper.

## Riviste Internazionali

- [J1] A. Armando and E. Giunchiglia. Embedding Complex Decision Procedures inside an Interactive Theorem Prover. *Annals of Mathematics and Artificial Intelligence*, 8:475–502, 1993.
- [J2] P. Traverso, A. Cimatti, L. Spalazzi, A. Armando, and E. Giunchiglia. MRG: Building Planners for Real World Complex Applications. *Applied Artificial Intelligence*, 8(3):333–357, 1994.
- [J3] E. Giunchiglia, A. Armando, and P. Pecchiari. Structured Proof Procedures. *Annals of Mathematics and Artificial Intelligence*, 15(I):1–18, 1995.

- [J4] E. Giunchiglia, A. Armando, P. Traverso, and A. Cimatti. Visual Representation of Natural Language Scene Descriptions. *IEEE Transactions on Systems, Man and Cybernetics*, 26(04):575–589, 1996. IEEE Inc., New York (USA).
- [J5] A. Armando, A. Cimatti, E. Giunchiglia, P. Pecchiari, L. Spalazzi, and P. Traverso. Flexible Planning by Integrating Multilevel Reasoning. *Journal of Engineering Applications of Artificial Intelligence*, 4:401–412, July 1995.
- [J6] F. Giunchiglia, P. Pecchiari, and A. Armando. Towards Provably Correct System Synthesis and Extension. *Future Generation Computer Systems*, 12(2/3):123–137, 1996.
- [J7] A. Armando, J. Gallagher, A. Smaill, and A. Bundy. Automating the Synthesis of Decision Procedures in a Constructive Metatheory. *Annals of Mathematics and Artificial Intelligence*, 22(3,4):259–279, 1998.
- [J8] A. Armando, A. Smaill, and I. Green. Automatic Synthesis of Recursive Programs: The Proof-Planning Paradigm. *Automated Software Engineering*, 6(4):329–356, 1999.
- [J9] A. Armando and S. Ranise. A Practical Extension Mechanism for Decision Procedures: the Case Study of Universal Presburger Arithmetic. *Journal of Universal Computer Science* vol. 7:2, pp. 124-140, 2001.
- [J10] A. Armando, A. Coglio, F. Giunchiglia, and S. Ranise. The Control Layer in Open Mechanized Reasoning Systems: Annotations and Tactics. *Journal of Symbolic Computation*, Vol. 32, No. 4, October 2001, pp. 305-332. Academic Press.
- [J11] A. Armando, M. Rusinowitch and S. Stratulat. Incorporating Decision Procedures in Implicit Induction. *Journal of Symbolic Computation*, Vol. 34, 2002, pp. 241-258.
- [J12] A. Armando and S. Ranise. Constraint Contextual Rewriting. *Journal of Symbolic Computation*, Volume 36, Issues 1-2, pp. 193-216, 2003.
- [J13] A. Armando, M. Rusinowitch and S. Ranise. The Rewriting Approach to Satisfiability Procedures. *Information and Computation*, 183 (2003), pp. 140-164.
- [J14] A. Armando and C. Ballarin. A Reconstruction and Extension of Maple’s Assume Facility via Constraint Contextual Rewriting. *Journal of Symbolic Computation*, Vol. 39/5, 2005, pp. 503-521.
- [J15] A. Armando, C. Castellini, E. Giunchiglia, M. Maratea. The SAT-based Approach to Separation Logic. *Journal of Automated Reasoning*, Vol. 35. Nos. 1-3, pp. 237-263, 2005.
- [J16] A. Armando and L. Compagna. SAT-based Model-Checking for Security Protocols Analysis. *International Journal of Information Security*, vol. 7, no. 1. January 2008.
- [J17] A. Armando, M. P. Bonacina, S. Ranise, and S. Schulz. New results on rewrite-based satisfiability procedures. *ACM Transactions on Computational Logic (TOCL)*, vol. 10, no. 1, 2009.
- [J18] A. Armando, J. Mantovani, and L. Platania. Bounded Model Checking of Software using SMT Solvers instead of SAT Solvers. *International Journal on Software Tools for Technology Transfer (STTT)*, vol. 11, issue 1, pages 69-83, 2009.
- [J19] A. Armando, R. Carbone and L. Compagna. LTL Model Checking for Security Protocols. *Journal of Applied Non-Classical Logics*, special issue on Logic and Information Security, vol. 19/4, pp. 403-429, 2009.
- [J20] A. Armando, E. Giunchiglia, M. Maratea and S. E. Ponta. An Action-based Approach to the Formal Specification and Automatic Analysis of Business Processes under Authorization Constraints. In the *Journal of Computer and System Sciences*, vol. 1, pages 119-141, 2012.
- [J21] A. Armando and S. Ranise. Scalable Automated Symbolic Analysis of Administrative Role-

- Based Access Control Policies by SMT solving. In the *Journal of Computer Security*, Volume 20, Number 4, pages 309-352, 2012.
- [J22] A. Armando, R. Carbone, L. Compagna, J. Cuellar, G. Pellegrino, A. Sorniotti. An authentication flaw in browser-based Single Sign-On protocols: Impact and remediations. In the *Computer & Security*, Volume 33, pages 41-58, 2013.
- [J23] A. Armando, A. Merlo, M. Migliardi, L. Verderame. Breaking and fixing the Android Launching Flow. In *Computers & Security*. vol. 39, pp. 104 - 115, 2013, doi: 10.1016/j.cose.2013.03.009
- [J24] A. Armando, M. Benerecetti, J. Mantovani. Counterexample-guided Abstraction Refinement for Linear Programs with Arrays. In *Automated Software Engineering*, vol. 21, no. 2, pp. 225-285, 2014.
- [J25] A. Armando and S. E. Ponta. Model Checking Authorization Requirements in Business Processes, In *Computers & Security*, vol. 40, pp. 1 - 22, 2014.
- [J26] A. Armando, G. Costa, A. Merlo, L. Verderame. Securing the “Bring Your Own Device” Paradigm. In *IEEE Computer*, vol. 47, no. 6, pp. 48-56, 2014.
- [J27] A. Armando, G. Costa, A. Merlo, L. Verderame. Formal modeling and automatic enforcement of Bring Your Own Device policies. In *International Journal of Information Security*, Springer Berlin Heidelberg, vol. 14, no. 2, pp. 123-140, 2015.
- [J28] A. Armando, R. Carbone, L. Compagna. SATMC: a SAT-based model checker for security protocols, business processes, and security APIs. In *Journal of Wireless Mobile Networks, Ubiquitous Computing, and Dependable Applications*, vol. 5, issue 4, p. 103-119, 2015.
- [J29] A. Armando, M. Bezzi, N. Metoui, and A. Sabetta. Risk-Based Privacy-Aware Information Disclosure. *International Journal of Secure Software Engineering*, 6, 2, 70-89, April 2015. ISSN: 1947-3036, doi:10.4018/IJSSE.2015040104
- [J30] A. Armando, R. Carbone, L. Compagna. SATMC: a SAT-based model checker for security protocols, business processes, and security APIs. In *International Journal on Software Tools for Technology Transfer*, Springer Berlin Heidelberg, p. 1-18, 2015. ISSN: 1433-2779, doi:10.1007/s10009-015-0385-y
- [J31] A. Merlo, G. Costa, L. Verderame, A. Armando. Android vs. SEAndroid: An empirical assessment. *Pervasive and Mobile Computing*, 30, 113-131, 2016. ISSN: 1574-1192, doi: 10.1016/j.pmcj.2016.01.006
- [J32] G. Sciarretta, R. Carbone, S. Ranise, A. Armando. Anatomy of the Facebook solution for mobile single sign-on: Security assessment and improvements. *Computers & Security* 71, 71-86, 2017. ISSN:0167-4048, doi: 10.1016/j.cose.2017.04.011
- [J33] N. Metoui, M. Bezzi, A. Armando. Risk-Based Privacy-Aware Access Control for Threat Detection Systems. *Transactions on Large-Scale Data- and Knowledge-Centered Systems*, 36, 1-30, 2017. ISSN: 978-3-662-56265-9, doi: 10.1007/978-3-662-56266-6\_1
- [J34] G. Costa, A. Merlo, L. Verderame, A. Armando. Automatic Security Verification of Mobile App Configurations. *Future Generation Computer Systems*, 80, 519-536, 2018. ISSN: 0167-739X, doi: 10.1016/j.future.2016.06.014
- [J35] E. Merlo, G. Costa, A. Armando. Building Next Generation Cyber Ranges with CRACK. *Computers & Security*, 2020. ISSN: 0167-739X, doi: 10.1016/j.cose.2020.101837
- [J36] L. Demetrio, B. Biggio, G. Lagorio, F. Roli, A. Armando. Functionality-Preserving Black-Box Optimization of Adversarial Windows Malware. *IEEE Transactions on Information Forensics*

- and Security, 16, 2021. ISSN: 1556-6013, doi: 10.1109/TIFS.2021.3082330
- [J37] L. Demetrio, S. E. Coull, B. Biggio, G. Lagorio, A. Armando, F. Roli. Adversarial EXEmples: A Survey and Experimental Evaluation of Practical Attacks on Machine Learning for Windows Malware Detection. *ACM Transactions on Privacy and Security*, 24(4), 2021. ISSN: 2471-2566, doi: 10.1145/3473039
- [J38] E. Russo, L. Verderame, A. Armando, A. Merlo. DIOXIN: runtime security policy enforcement of fog applications. *International Journal of Grid and Utility Computing*, 12(2), 2021. ISSN: 1741-8488, doi: 10.1504/IJGUC.2021.114821
- [J39] L. Demetrio, S.E. Coull, B. Biggio, A. Armando, F. Roli. Adversarial EXEmples: A Survey and Experimental Evaluation of Practical Attacks on Machine Learning for Windows Malware Detection *ACM Transactions on Privacy and Security*, 2021, 24(4), 27.
- [J40] E. Russo, G. Costa, G. Longo, A. Armando, A. Merlo. LiDiTE: a Full-Fledged and Feather-weight Digital Twin Framework. *IEEE Transactions on Dependable and Secure Computing*, 2023.
- [J41] G. Longo, E. Russo, A. Armando, A. Merlo. Attacking (and Defending) the Maritime Radar System. *IEEE Transactions on Information Forensics and Security*, 2023.

## Conferenze Internazionali

- [C1] A. Armando, E. Giunchiglia, and P. Traverso. From Propositional Deciders to First Order Deciders: a Structured Approach to the Decision Problem. In *Artificial Intelligence and Cognitive Science '92*, pp. 295–298, Limerick, Irlanda, 10-11 Settembre 1992. Springer Verlag.
- [C2] P. Traverso, A. Armando, and E. Giunchiglia. A knowledge Based System for Automatic 3D Scene Generation. In *Artificial Intelligence - Methodology, Systems, Applications. Proceedings of the 5th International Conference on A.I. - AIMSA'92*, pp. 255–264, Sofia, Bulgaria, 21-24 Settembre 1992. North Holland.
- [C3] A. Cimatti, P. Traverso, S. Dalbosco, and A. Armando. Navigation by Combining Reactivity and Planning. In *Proceedings of Intelligent Vehicles '92 in collaboration with IEEE Industrial Electronics*, pp. 265–270, Detroit (USA), 29 Giugno - 1 Luglio 1992.
- [C4] S. Dalbosco and A. Armando. MRG: an integrated multifunctional reasoning system. In *Proceedings of the 9th Biennial Conference of the Society for the Study of Artificial Intelligence and Simulation of Behaviour*, Birmingham (UK), 29 Marzo - 2 Aprile 1993. IOS Press.
- [C5] A. Armando and P. Pecchiari. NALIG: a CAD system for interior design with high level interaction capabilities. In *Proceedings the 5th IEEE International Conference on Tools with Artificial Intelligence - TAI'93*, pp. 446–447, Boston, Massachussets (USA), 8-11 Novembre 1993. IEEE Press.
- [C6] M. Di Manzo, E. Giunchiglia, A. Armando, and P. Pecchiari. Proving Formulas through Reduction to Decidable Classes. In *Advances in Artificial Intelligence. Proc. AI\*IA'93*, number LNAI 728 in Lecture Notes in Artificial Intelligence, pp. 1–10, Torino, Italia, 26-28 Ottobre 1993. Springer Verlag.
- [C7] A. Armando, A. Cimatti, and L. Viganò. Building and Executing Proof Strategies in a Formal Metatheory. In *Advances in Artificial Intelligence. Proc. AI\*IA'93*, number LNAI 728 in Lecture Notes in Artificial Intelligence, pp. 11–22, Torino, Italia, 26-28 Ottobre 1993. Springer Verlag.

- [C8] A. Armando and S. Ranise. Interactive Development of Provably Sound Decision Procedures. In *Proceedings of the 2nd Biennial Workshop of the Society for the Study of Artificial Intelligence and Simulation of Behaviour (AISB'96) on Automated Reasoning: Bridging the Gap between Theory and Practice*, pp. 1–2, Brighton, UK, 1-2 Aprile 1996.
- [C9] A. Armando, A. Smaill, and I. Green. Automatic Synthesis of Recursive Programs: The Proof-Planning Paradigm. In *Proceedings of the 12th IEEE International Automated Software Engineering Conference (ASE'97)*, pp. 2–9, Incline Village, Nevada (USA), 3-5 Novembre 1997. IEEE Computer Society.
- [C10] A. Armando, E. Melis, and S. Ranise. Constraint Solving in Logic Programming and in Automated Deduction: a Comparison. In *Proceedings of the 8th International Conference on Artificial Intelligence: Methodology, Systems, Applications (AIMSA98)*, volume 1480 of *Lecture Notes in Artificial Intelligence*, pp. 28–38, Sozopol, Bulgaria, 21-23 Settembre 1998.
- [C11] A. Armando and S. Ranise. From Integrated Reasoning Specialists to “Plug-and-Play” Reasoning Components. In *Proceedings of the 4th International Conference Artificial on Intelligence and Symbolic Computation (AISC98)*, volume 1476 of *Lecture Notes in Computer Science*, pp. 42–54, Plattsburgh, USA, 16-18 Settembre 1998.
- [C12] A. Armando, C. Castellini, and E. Giunchiglia. SAT-Based Procedures for Temporal Reasoning. In *Proceedings of the 5th European Conference on Planning (ECP-99)*, LNAI n. 1809 pp. 98–109, Durham, UK, 8-10 Settembre 1999. Springer Verlag.
- [C13] A. Armando and S. Ranise. Termination of Constraint Contextual Rewriting. In *Proceedings of the 3rd International Workshop on Frontiers of Combining Systems (FroCoS'2000)*, LNAI n. 1794, pp. 47–61, Nancy, Francia, 22-24 Marzo 2000. Springer Verlag.
- [C14] A. Armando, S. Ranise and M. Rusinowitch. Uniform Derivation of Decision Procedures by Superposition. In the Proceedings on the Annual Conference on Computer Science Logic (CSL01), Paris, France, 10-13 September 2001, LNCS no. 2142, pp. 513-527.
- [C15] A. Armando and C. Ballarin. Maple’s Evaluation Process as Constraint Contextual Rewriting. In the Proceedings of the International Symposium on Symbolic and Algebraic Computation (ISSAC'2001). July 22 - 25, 2001, ORCCA and University of Western Ontario.
- [C16] A. Armando, L. Compagna and S. Ranise. RDL—Rewrite and Decision procedure Laboratory. In Proceedings of the International Joint Conference on Automated Reasoning (IJCAR 2001), June 18-23, Siena, Italy. LNAI n. 2083, pp. 663-669.
- [C17] A. Armando, S. Ranise and M. Rusinowitch. A Superposition Based Methodology to Design Satisfiability Decision Procedures. In the Proceedings on the 5th International Workshop on Unification (UNIF'2001), Siena, Italy, 18-19 June 2001, pp. 8-12.
- [C18] A. Armando, F. Peccia and S. Ranise. The Phase Transition of the Linear Inequalities Problem. In the Proceedings on the 7th International Conference on Principles and Practice of Constraint Programming (CP'01), Paphos, Cyprus, November 26-December 1, 2001. LNCS 2239, pp. 422-432.
- [C19] A. Armando, D. Basin, M. Bouallagui, Y. Chevalier, L. Compagna, S. Mödersheim, M. Rusinowitch, M. Turuani, L. Viganò, and L. Vigneron. The AVISS Security Protocol Analysis Tool. In the Proceeding of the 14th International Conference on Computer Aided Verification, CAV 2002, Copenhagen, Denmark, July, 27-31, 2002.
- [C20] A. Armando and L. Compagna Automatic SAT-Compilation of Protocol Insecurity Problems via Reduction to Planning. In the Proceedings of the Joint International Conference on Formal Techniques for Networked and Distributed Systems (FORTE 2002), November 11-14 , 2002,

Houston, Texas.

- [C21] A. Armando and L. Compagna. Abstraction-driven SAT-based Analysis of Security Protocols. In the proceedings of the Sixth International Conference on Theory and Applications of Satisfiability Testing (SAT 2003), May 5-8, 2003, S.Margherita Ligure, Italy. LNCS 2919.
- [C22] A. Armando, L. Compagna and P. Ganty. SAT-based Model-Checking of Security Protocols using Planning Graph Analysis. In the proceedings of the 12th International FME Symposium (FME 2003), September 8-14 2003, Pisa, Italy. LNCS 2885.
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