Michele Pasqua

Academic Curriculum Vitæ

Tenure-Track Assistant Professor

Department of Computer Science - University of Verona, Italy

Scientific Sector INFO-01/A (Computer Science)

Education

2015–2018 **PhD in Computer Science**, *University of Verona*, Italy.
Scholarship holder

2013–2015 **MSc in Computer Science and Engineering**, *University of Verona*, Italy, *110/110 cum laude*.
Curriculum: Software Engineering and Security

PhD Thesis

Title *"Hyper Static Analysis of Programs – An Abstract Interpretation-Based Framework for Hyperproperties Verification"*

Supervisor Prof. Isabella Mastroeni

Referees Prof. Antoine Miné, Prof. David A. Naumann

Description In my PhD I have developed a methodology to verify, trough static analysis, hyperproperties of computer programs. In particular, the focus is on information-flow hyperproperties, which are very pervasive in systems security. The approach is based on abstract interpretation, a very powerful formal framework for the approximation of programs' semantics. My thesis represents the first systematic approach leveraging abstract interpretation to hyperproperties verification.

Available at `https://doi.org/10.5281/zenodo.6584085`

Masters Thesis

Title *"A semantic approach to Software Watermarking – A general model based on Abstract Interpretation"*, Original: "Approccio semantico al Software Watermarking – Un modello generale basato su Interpretazione Astratta"

Supervisor Prof. Mila Dalla Preda

Description The thesis gives a semantic formulation of software watermarking. In particular, the thesis presents a general mathematical definition for watermarking systems, based on abstract interpretation. With this latter, it is possible to measure the features (*e.g.,* resilience, secrecy, accuracy) of existing watermarking techniques and to perform comparisons between different watermarking techniques.

PhD Schools

2018 **Midlands Graduate School in the Foundations of Computing Science (MGS18)**, *University of Nottingham*, UK.

2017 **Italian Summer School of Logic**, *The University of Milan*, Italy.

2016 **Security and Trust of Next Generation Enterprise Information Systems**, *FBK – Bruno Kessler Foundation*, Italy.

2014 **International Summer School on Information Security and Protection (ISSISP14)**, *University of Verona*, Italy.

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Teaching and Supervising

Teaching

AY 2024/2025 **Professor (Course Coordinator)**, *University of Verona*, Italy, Course: "Principles and Applications of Abstract Interpretation".
PhD Programme in Computer Science

AY 2023/2024 **Professor (Lab Instructor)**, *University of Verona*, Italy, Course: "Cyber-security for IoT".
MSc in Computer Engineering for Robotics and Smart Industry

AY 2021/2022 to AY 2023/2024 **Professor (Course Coordinator)**, *University of Verona*, Italy, Course: "Informatics and multimedia production".
MSc in Publishing and Journalism

2020 to 2023 **Lecturer and Instructor**, *University of Verona*, Italy, "Training program in cybersecurity".
CyberChallenge.IT

AY 2017/2018 **Teaching Assistant**, *University of Verona*, Italy, Course: "Logic".
BSc in Computer Science

AY 2016/2017 **Teaching Assistant**, *University of Verona*, Italy, Course: "Programming for Bioinformatics".
BSc in Bioinformatics

AY 2015/2016 **Teaching Assistant**, *University of Padova*, Italy, Course: "Automata and Formal Languages".
BSc in Computer Science

Supervising

2024 **MSc Thesis Supervisor**, *University of Verona*, Italy (Scientific Sector: Informatics).
MSc in Computer Science and Engineering – *Supervisor of 3 MSc theses*

2023 to 2024 **MSc Thesis Supervisor**, *University of Verona*, Italy (Scientific Sector: Informatics).
MSc in Publishing and Journalism – *Supervisor of 4 MSc theses*

2022 to 2024 **MSc Thesis Co-Supervisor**, *University of Verona*, Italy (Scientific Sector: Informatics).
MSc in Computer Science and Engineering – *Co-Supervisor of 6 MSc theses*

2022 **MSc Thesis Co-Supervisor**, *University of Udine*, Italy (Scientific Sector: Informatics).
MSc in Computer Science – *Co-Supervisor of 1 MSc thesis*

2022 **BSc Thesis Co-Supervisor**, *University of Udine*, Italy (Scientific Sector: Informatics).
MSc in Computer Science – *Co-Supervisor of 1 BSc thesis*

2018 to 2022 **BSc Thesis Co-Supervisor**, *University of Verona*, Italy (Scientific Sector: Informatics).
BSc in Computer Science – *Co-Supervisor of 3 BSc theses*

Research

My main research interests are in the fields of **software engineering** and **formal methods** for programming languages; with particular attention to functional and security testing, program verification and semantics, language-based security, distributed systems design, code protection and malware detection. Some keywords:

- abstract interpretation
- property and hyperproperty verification
- system semantics
- (modular) static analysis
- type systems
- process algebra
- bisimulation theory
- IoT and CPS security
- REST APIs
- black-box testing
- software watermarking and obfuscation
- metamorphic malware
- event-driven architecture
- autonomic systems
- security testing
- statistical model-checking

Actually, I am exploring new research topics, such as the security/correctness of blockchain-based programs (smart-contracts) and the verification of quantum programming languages.

Indicators

Total citations **292** (Scholar) :: **187** (Scopus) :: **239** (ResearchGate)

H-index **11** (Scholar) :: **8** (Scopus) :: **9** (ResearchGate)

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Past Positions

Jan 1, 2022 to Sep 30, 2024 — **Assistant Professor**, *University of Verona*, Italy, Department of Computer Science.
Scientific Sector: INF/01 (Computer Science)

Oct 1, 2021 to Dec 31, 2021 — **Postdoctoral Researcher**, *University of Verona*, Italy, Department of Computer Science.
Project: Automatic Black-Box Testing of RESTful API
Supervisor: Prof. Mariano Ceccato

Oct 1, 2020 to Sep 30, 2021 — **Postdoctoral Researcher**, *University of Udine*, Italy, Department of Mathematics, Computer Science and Physics.
Project: Methods and Tools for Trustworthy Smart Systems: Innovative Programming Models and Paradigms
Supervisor: Prof. Marino Miculan

Oct 1, 2018 to Sep 30, 2020 — **Postdoctoral Researcher**, *University of Verona*, Department of Computer Science.
Project: Security Static Analysis for Android Things
Supervisor: Prof. Massimo Merro

Participation in Research Projects

2023 to Present — **Research Assistant**, *PRIN project "Smartitude: Automated Testing and Security Assessment of Smart Contracts" (2023-2025)*, Funded by "Ministry of Education, University and Research (Italy)", Coordinator: Dr. Dario Di Nucci.

2021 to Present — **Principal Investigator**, *PON project "Integrazione di servizi rivolti al cittadino per facilitare la corretta raccolta differenziata dei rifiuti urbani" (2021-2024)*, Funded by "Ministry of Education, University and Research (Italy)", Coordinator: Prof. Mariano Ceccato.

2023 — **Research Assistant**, *Project "Automated Testing of REST APIs"*, Funded by "Muscope Cybersecurity Srl", Coordinator: Prof. Mariano Ceccato.

2023 — **Research Assistant**, *Project "Machine Learning for automated testing of REST APIs"*, Funded by "Equixely Srl", Coordinator: Prof. Mariano Ceccato.

2022 to 2023 — **Principal Investigator**, *SNSF project "Metamorphic Hyperproperty Testing" (2022-2023)*, Funded by "Swiss National Science Foundation (Switzerland)", Coordinator: Prof. Paolo Tonella.

2021 — **Research Assistant**, *Joint project "Build Trust Proof of Concept" (2021)*, Funded by "University of Verona and Build Trust Srl", Coordinator: Prof. Franco Fummi.

2020 to 2022 — **Research Assistant**, *PRIN project "IT MATTERS - Methods and Tools for Trustworthy Smart Systems" (2019-2022)*, Funded by "Ministry of Education, University and Research (Italy)", Coordinator: Prof. Rocco De Nicola.

2019 to 2022 — **Research Assistant**, *PRIN project "ASPRA - Analysis of Program Analyses" (2019-2022)*, Funded by "Ministry of Education, University and Research (Italy)", Coordinator: Prof. Roberto Giacobazzi.

2018 to 2020 — **Research Assistant**, *Joint project "SAINTS - Security Static Analysis for Android Things" (2018-2020)*, Funded by "University of Verona (Italy) and JuliaSoft Srl", Coordinator: Prof. Massimo Merro.

2018 to 2020 — **Research Assistant**, *Project "ARES - Analyzing Modern Software Security" (2018-2020)*, Funded by "University of Verona (Italy)", Coordinator: Prof. Isabella Mastroeni.

2016 to 2017 — **Research Assistant**, *FIRB project "FACE - Formal Avenue for Chasing Malware" (2014-2018)*, Funded by "Ministry of Education, University and Research (Italy)", Coordinator: Prof. Mila Dalla Preda.

Fundings

2023 — **Direct Allocation**, *Technology consulting agreement*, Amia Verona Spa (Italy).
Consulting activities concerning the information system and the IoT infrastructure, for a total compensation of € 15'660 before VAT.

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2023 **Competitive Grant**, *Fondo Italiano per le Scienze Applicate (FISA) 2022*, Ministry of Education, University and Research (Italy).
Principal Investigator of the project "Distributed Reactive Internet of Things" (proposal n. FISA-2022-00571, Information and Communication Technology), selected for a funding amount of € 1'070'000 (project not funded due to budget saturation).

2022 **Competitive Grant**, *SNSF Scientific Exchange Programme 2022*, Swiss National Science Foundation (Switzerland).
Principal Investigator of the project "Metamorphic Hyperproperty Testing" (proposal n. IZSEZ0_213565), granted with a funding amount of CHF 18'500.

Research Visits

2022 to 2023 **Software Institute - Università della Svizzera Italiana (Lugano, Switzerland)**, *SNSF project "Metamorphic Hyperproperty Testing" (2022-2023)*, Funded by "Swiss National Science Foundation (Switzerland)", Coordinator: Prof. Paolo Tonella (6 months).

2018 **Laboratoire d'informatique de Paris 6 - Sorbonne Université (Paris, France)**, *ERC project "MOPSA: Modular Open Platform for Static Analysis" (2016-2021)*, Funded by "European Research Council (Consolidator Grant Agreement 68139)", Coordinator: Prof. Antoine Miné (2 months).

International Collaborations

2022 to Present **Academic**, *Software Institute - USI*, Lugano (Switzerland).
Topic: Hypertesting of Program
Main contact: Prof. Paolo Tonella

2021 to 2022 **Academic**, *Georgia Institute of Technology*, Atlanta (USA).
Topic: REST API Testing
Main contact: Prof. Alessandro Orso

2021 to 2022 **Industrial**, *IBM Research*, Yorktown Heights (USA) and Haifa (Israel).
REST API Testing
Main contacts: Dr. Saurabh Sinha and Dr. Rachel Tzoref-Brill

2018 to 2020 **Academic**, *KTH Royal Institute of Technology*, Stockholm (Sweden).
Topic: Formal Methods for IoT Security
Main contact: Prof. Musard Balliu

Committees and Reviewing

ISSTA25 **Program Committee Member**, *34th ACM International Symposium on Software Testing and Analysis*, June 25-28, 2025.
Trondheim, NO

ICST25 **Publicity Co-Chair**, *18th IEEE International Conference on Software Testing, Verification and Validation*, May, 2025.
Naples, IT

SCAM24 **Program Committee Member**, *24th IEEE International Working Conference on Source Code Analysis and Manipulation – Research Track; New Ideas and Emerging Results Track*, October, 2024.
Flagstaff, US

NSAD24 **Program Co-Chair**, *10th ACM SIGPLAN International Workshop on Numerical and Symbolic Abstract Domains*, October 22, 2024.
Pasadena, US

PeerJ CS **Editorial Board Member**, *PeerJ Computer Science*, Journal, PeerJ (from March 22, 2024).

SAS24 **Program Committee Member**, *31st Static Analysis Symposium*, October 20-22, 2024.
Pasadena, US

LiSSAI24 **Organizing Committee Member**, *Lipari Summer School on Abstract Interpretation*, September 1-7, 2024.
Lipari, IT

ECAI24 **Program Committee Member**, *27th European Conference on Artificial Intelligence*, October 19-24, 2024.
Santiago de Compostela, ES

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ASE24 **Program Committee Member**, *39th IEEE/ACM International Conference on Automated Software Engineering*, April 12-November 1, 2024.
Sacramento, US

ICSE24 **Program Committee Member**, *46th IEEE/ACM International Conference on Software Engineering – Demonstrations Track*, April 12-21, 2024.
Lisbon, PT

EMSE **Reviewer**, *Empirical Software Engineering*, Journal, Springer (2024).

THMS **Reviewer**, *Tran. on Human-Machine Systems*, Journal, IEEE (2024).

COSE **Reviewer**, *Computers and Security*, Journal, Elsevier (2024).

FMSD **Reviewer**, *Formal Methods in System Design*, Journal, Springer (2023 – 2024).

TIFS **Reviewer**, *Tran. on Information Forensics and Security*, Journal, IEEE (2023 – 2024).

SCAM23 **Program Co-Chair**, *23rd IEEE International Working Conference on Source Code Analysis and Manipulation – New Ideas and Emerging Results Track*, October 2-3, 2023.
Bogotà, CO

ECAI23 **Program Committee Member**, *26th European Conference on Artificial Intelligence*, October 1-6, 2023.
Kraków, PL

JSS **Reviewer**, *Journal of Systems and Software*, Journal, Elsevier (2022 – 2024).

TSE **Reviewer**, *Tran. on Software Engineering*, Journal, IEEE (2022 – 2024).

TOSEM **Reviewer**, *Tran. on Software Engineering and Methodology*, Journal, ACM (2022 – 2024).

COMCOM **Reviewer**, *Computer Communications*, Journal, Elsevier (2023).

SCAM22 **Program Committee Member**, *22nd IEEE International Working Conference on Source Code Analysis and Manipulation – Research Track*, October 3-4, 2022.
Limassol, CY

SCAM22 **Proceedings and Local Chair**, *22nd IEEE International Working Conference on Source Code Analysis and Manipulation – Research Track*, October 3-4, 2022.
Limassol, CY

AUSE **Reviewer**, *Automated Software Engineering*, Journal, Springer (2022).

SCN **Reviewer**, *Security and Communication Networks*, Journal, Wiley and Hindawi (2022).

VALID19 **Program Co-Chair**, *11th International Conference on Advances in System Testing and Validation Lifecycle – Formal Methods for Software Analysis and Verification Special Track*, November 26, 2019.
Valencia, ES

Other Research Activities

Jul 24, 2023 to Feb 7, 2024 **Public Tender Committee Member**, *Amia Verona Spa*, Call 8839319 – CIG 9534845302.
Technology consultant regarding the information system and the IoT infrastructure for the public tender entitled "Accordo quadro con un unico operatore economico per la fornitura di sistema integrato ed intelligente per la raccolta differenziata "4.0" di rifiuti. Valore stimato: € 19.000.000,00 + IVA, oneri pari a zero."

Dec 14, 2023 **Evaluation Committee Member**, *University of Verona*, Italy, AdR 4387/23 (Informatics).
Research contract entitled "Smartitude: Automated Testing and Security Assessment of Smart Contracts"

Jun 21, 2023 **Evaluation Committee Member**, *University of Verona*, Italy, AdR 4218/23 (Informatics).
Research contract entitled "Verifica e integrazione di REST API"

Dec 1, 2022 to Dec 6, 2022 **Evaluation Committee Member**, *University of Verona*, Italy, AdR R4094/22 (Informatics).
Research contract entitled "Automated software engineering and software protection for securing edge computing in IoT artificial intelligence applications"

Dec 1, 2022 to Dec 6, 2022 **Evaluation Committee Member**, *University of Verona*, Italy, AdR R4095/22 (Informatics).
Research contract entitled "Automated software engineering and secure software-hardware interfacing for securing edge computing in IoT artificial intelligence applications"

Publications

Articles in International Journals with Referee

TCS24 Behavioral Equivalences for AbU: Verifying Security and Safety in Distributed IoT Systems – *Pasqua M. and Miculan, M.* – In: Theoretical Computer Science (pp. 1–23), Elsevier, 2024

TCS23 AbU: A Calculus for Distributed Event-driven Programming with Attribute-based Interaction – *Pasqua M. and Miculan, M.* – In: Theoretical Computer Science (pp. 1–32), Elsevier, 2023

JSS23 Enhancing Ethereum smart-contracts static analysis by computing a precise Control-Flow Graph of Ethereum bytecode – *Pasqua M., Benini A., Contro F., Crosara M., Dalla Preda M. and Ceccato M.* – In: Journal of Systems and Software (pp. 1–18), Elsevier, 2023

ACCESS23 The AbU Language: IoT Distributed Programming Made Easy – *Pasqua, M., Comuzzo, M. and Miculan, M.* – In: IEEE Access (pp. 1–14), IEEE, 2023 (to appear)

STVR22 Automated Black-Box Testing of Nominal and Error Scenarios in RESTful APIs – *Corradini, D., Zampieri, A., Pasqua M., Viglianisi, E., Dallago, M. and Ceccato, M.* – In: Software Testing, Verification and Reliability (pp. 1–33), John Wiley & Sons, 2022

TOPS21 Friendly Fire: Cross-App Interactions in IoT Platforms – *Balliu, M., Merro, M., Pasqua M. and Shcherbakov, M.* – In: ACM Trans. on Privacy and Security (pp. 1–40), ACM Press, 2021

MSCS19 Semantics-based Software Watermarking by Abstract Interpretation – *Dalla Preda, M. and Pasqua, M.* – In: Mathematical Structures in Computer Science (pp. 339–388), Cambridge University Press, 2019

ENTCS17 Software Watermarking: A Semantics-based Approach – *Dalla Preda, M. and Pasqua, M.* – In: Electronic Notes in Theoretical Computer Science (pp. 71–85), Elsevier, 2017

Articles in International Conferences with Referee

ASE24 DeepREST: Automated Test Case Generation for REST APIs Exploiting Deep Reinforcement Learning – *Corradini, D., Montolli, Z., Pasqua, M. and Ceccato, M.* – In: Proceedings of the 39th International Conference on Automated Software Engineering (to appear), ACM, 2024

ISoLA24 Local Reasoning and Attribute-based Memory Updates for Enforcing Global Invariants in Collective Adaptive Systems – *Pasqua, M., and Miculan, M.* – In: Proceedings of the 12th International Symposium On Leveraging Applications of Formal Methods, Verification and Validation (to appear), Springer, 2024

ICSE24 Hypertesting of Programs: Theoretical Foundation and Automated Test Generation – *Pasqua, M., Ceccato, M. and Tonella, P.* – In: Proceedings of the 46th International Conference on Software Engineering (pp. 1409–1420), ACM, 2024

SAS23 Domain Precision in Galois Connection-less Abstract Interpretation – *Mastroeni, I. and Pasqua, M.* – In: Proceedings of the 30th Static Analysis International Symposium (pp. 434–459), Springer, 2023

ISSTA23 Enhancing REST API Testing with NLP Techniques – *Kim, M., Corradini, D., Pasqua, M., Ceccato, M., Orso, A., Sinha, S. and Tzoref-Brill, R.* – In: Proceedings of the 32nd International Symposium on Software Testing and Analysis (pp. 1232–1243), ACM, 2023

ICSE23 Automated Black-box Testing of Mass Assignment Vulnerabilities – *Corradini, D., Pasqua, M. and Ceccato, M.* – In: Proceedings of the 45th International Conference on Software Engineering (pp. 2553–2564), IEEE, 2023

ICSME22 RestTestGen: An Extensible Framework for Automated Black-box Testing of RESTful APIs – *Corradini, D., Zampieri, A., Pasqua, M. and Ceccato, M.* – In: Proceedings of the 38th International Conference on Software Maintenance and Evolution (pp. 504–508), IEEE, 2022

IECON22 Integrating Smart Contracts in Manufacturing for Automated Assessment of Production Quality – *Gaiardelli, S., Spellini, S., Pasqua, M., Ceccato, M. and Fummi, F.* – In: Proceedings of the 48th Annual Conference of the IEEE Industrial Electronics Society (pp. 1–6), IEEE, 2022

SAC22 Verifying Opacity by Abstract Interpretation – *Mastroeni, I. and Pasqua, M.* – In: Proceedings of the 37th ACM/SIGAPP Symposium On Applied Computing (pp. 1817–1826), ACM, 2022

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ICTCS22 Distributed Programming of Smart Systems with Event-Condition-Action Rules (Short Paper) – *Miculan, M. and Pasqua, M.* – In: 23rd Italian Conference on Theoretical Computer Science (pp. 1–6), CEUR-WS, 2022

SEFM21 On the Security and Safety of AbU Systems – *Pasqua, M. and Marino, M.* – In: Proceedings of the 19th International Conference on Software Engineering and Formal Methods (pp. 178–198), Springer, 2021

SCAM21 Empirical Comparison of Black-box Test Case Generation Tools for RESTful APIs – *Corradini, D., Zampieri, A., Pasqua, M. and Ceccato, M.* – In: Proceedings of the 21st International Working Conference on Source Code Analysis and Manipulation (pp. 226–236), IEEE, 2021

ICSME21 Restats: A Test Coverage Tool for RESTful APIs – *Corradini, D., Zampieri, A., Pasqua, M. and Ceccato, M.* – In: Proceedings of the 37th International Conference on Software Maintenance and Evolution (pp. 594–598), IEEE, 2021

ICTAC21 A Calculus for Attribute-based Memory Updates – *Miculan, M. and Pasqua, M.* – In: Proceedings of the 18th International Colloquium on Theoretical Aspects of Computing (pp. 366–385), Springer, 2021

FormaliSE20 Impact Analysis of Cyber-Physical Attacks on a Water Tank System via Statistical Model Checking – *Munteanu, A., Merro, M. and Pasqua, M.* – In: Proceedings of the 8th International Conference on Formal Methods in Software Engineering (pp. 34–43), ACM, 2020

CSF19 Securing Cross-App Interactions in IoT Platforms – *Balliu, M., Merro, M. and Pasqua, M.* – In: Proc. of the 32th Computer Security Foundations Symposium (pp. 319–334), IEEE, 2019

SAC19 Statically Analyzing Information Flows: An Abstract Interpretation-based Hyperanalysis for Non-Interference – *Mastroeni, I. and Pasqua, M.* – In: Proceedings of the 34th ACM/SIGAPP Symposium On Applied Computing (pp. 2215–2223), ACM, 2019

SAS18 Verifying Bounded Subset-Closed Hyperproperties – *Mastroeni, I. and Pasqua, M.* – In: Proc. of the 25th Static Analysis International Symposium (pp. 263–283), Springer, 2018

SAS17 Hyperhierarchy of Semantics: A Formal Framework for Hyperproperties Verification – *Mastroeni, I. and Pasqua, M.* – In: Proceedings of the 24th Static Analysis International Symposium (pp. 232–252), Springer, 2017

ICTCS17 On topologies for (hyper)properties – *Pasqua, M. and Mastroeni, I.* – In: Proceedings of the 18th Italian Conference on Theoretical Computer Science (pp. 1–12), CEUR-WS, 2017

Articles in International Workshops with Referee

VALID19 Chameleon: The Gist of Dynamic Programming Languages – *Buro, S. and Pasqua, M.* – In: Proceedings of VALID 2019 - Special track: Formal Methods for Software Analysis and Verification (pp. 1–5), IARIA, 2019

FMW19 An abstract domain for objects in dynamic programming languages – *Arceri, V., Pasqua, M. and Mastroeni, I.* – In: Proceedings of the Formal Methods 2019 International Workshops (pp. 136–151), Springer, 2019

Extended Abstracts and Technical Reports

ITASEC22 Security and Safety of IoT Systems Based on ECA Rules (Extended Abstract) – *Pasqua, M. and Miculan, M.* – In: 6th Italian Conference on CyberSecurity (pp. 1–12), 2022

TR21b On the Security and Safety of AbU Systems (supplementary material) – *Pasqua, M. and Miculan, M.* – Technical Report: Zenodo October/2021, `https://doi.org/10.5281/zenodo.5570332`, 2021

TR21a A Calculus for Attribute-based Memory Updates (supplementary material) – *Miculan, M. and Pasqua, M.* – Technical Report: Zenodo July/2021, `https://doi.org/10.5281/zenodo.5057165`, 2021

ITASEC20 Friendly Fire: Cross-App Interactions in IoT Platforms (Extended Abstract) – *Balliu, M., Merro, M. and Pasqua, M.* – In: 4th Italian Conference on CyberSecurity (pp. 1–12), 2020

TR16 A semantics-based approach to software watermarking by abstract interpretation – *Dalla Preda, M. and Pasqua, M.* – Technical Report: RR 98/2016 - University of Verona, 2016

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Public Talks

Invited Talks and Lectures

Sep 11, 2024 **Formally Prove and Empirically Disprove Program Hyperproperties**, *3rd Summer School on Security Testing and Verification*, Brussels, BE.
Invited Lecturer

May 25, 2023 **Static Analysis Properties as Program Hyperproperties**, *2nd Symposium on Challenges of Software Verification*, Venice, IT.
Invited Speaker

Conference Presentations

Apr 17, 2024 **Hypertesting of Programs: Theoretical Foundation and Automated Test Generation**, *46th International Conference on Software Engineering*, Lisbon, PT.

Oct 22, 2023 **Domain Precision in Galois Connection-less Abstract Interpretation**, *30th Static Analysis International Symposium*, Cascais, PT.

Sep 9, 2022 **Distributed Programming of Smart Systems with Event-Condition-Action Rules**, *23rd Italian Conference on Theoretical Computer Science*, Rome, IT.

Dec 8, 2021 **On the Security and Safety of AbU Systems**, *19th International Conference on Software Engineering and Formal Methods*, (virtual).

Sep 10, 2021 **A Calculus for Attribute-based Memory Updates**, *18th International Colloquium on Theoretical Aspects of Computing*, Nur-Sultan, KZ (virtual).

Feb 6, 2020 **Friendly Fire: Cross-App Interactions in IoT Platforms**, *4th Italian Conference on Cyber-Security*, Ancona, IT.

Oct 8, 2019 **An abstract domain for objects in dynamic programming languages**, *8th International Workshop on Numerical and Symbolic Abstract Domains*, Porto, PT.

Jun 27, 2019 **Securing Cross-App Interactions in IoT Platforms**, *32th IEEE Computer Security Foundations Symposium*, Hoboken, USA.

Apr 10, 2019 **Abstract Interpretation of Information Flows: A Sound Static Analyzer for Non-Interference**, *34th ACM/SIGAPP Symposium On Applied Computing*, Limassol, CY.

Aug 30, 2018 **Verifying Bounded Subset-Closed Hyperproperties**, *25th Static Analysis International Symposium*, Freiburg im Breisgau, DE.

Sep 27, 2017 **On topologies for (hyper)properties**, *18th Italian Conference on Theoretical Computer Science*, Naples, Italy.

Sep 1, 2017 **Hyperhierarchy of Semantics: A Formal Framework for Hyperproperties Verification**, *24th Static Analysis International Symposium*, New York, USA.

Aug 29, 2016 **Software Watermarking: A Semantics-based Approach**, *7th International Workshop on Numerical and Symbolic Abstract Domains*, Edinburgh, UK.

Seminars

Sep 21, 2022 **A gentle introduction to hyperproperties**, *Università della Svizzera Italiana*, Switzerland.
Invited talk

May 3, 2019 **Semantics-based Software Watermarking by Abstract Interpretation**, *University of Verona*, Italy.
MSc course "Software Security"

May 2, 2018 **Hyperproperties and their verification**, *Sorbonne University*, France.
Invited talk

Mar 15, 2018 **Hyperproperties and Temporal Logics**, *University of Verona*, Italy.
PhD course "Temporal Logic"

Nov 22, 2017 **Semantics-based Software Watermarking by Abstract Interpretation**, *University of Verona*, Italy.
MSc course "Software Security"

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Dec 21, 2016 **Semantics-based Software Watermarking by Abstract Interpretation**, *University of Verona*, Italy.
MSc course "Software Security"

May 27, 2016 **Measurements in Quantum Computing**, *University of Verona*, Italy.
PhD course "Quantum Computing"

Languages

Italian **Mothertongue**

English **Advanced** *CEFR B2 Certificate - University of Verona*

Affiliations and Awards

2024 **Wiley Top Cited Article 2022-2023**, *Software Testing, Verification and Reliability - Journal, John Wiley & Sons*.
Paper: Automated black-box testing of nominal and error scenarios in RESTful APIs

2023 **Distinguished Reviewer Award**, *Tran. on Software Engineering - Journal, IEEE*.

2022–Present **Member of GRIN**, *Gruppo di Informatica*.

2020–Present **CyberChallenge.IT**, *University of Verona team*.

2019–Present **Member of ACM**, *Association for Computing Machinery*.

2017–Present **Member of EATCS**, *European Association for Theoretical Computer Science*, Italian Chapter.

2019–2022 **Member of IEEE**, *Institute of Electrical and Electronic Engineers*.

In compliance with the Italian D. Lgs. 2003/196 and the European GDPR 2016/679, I hereby authorize you to use and process my personal details contained in this document.

Verona October 1, 2024 Pasqua Michele

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