Michele Pasqua

Academic Curriculum Vitæ

Assistant Professor

Department of Computer Science - University of Verona, Italy

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

2023 to 2024	**MSc Thesis Supervisor**, *University of Verona*, Italy (Scientific Sector: Informatics). MSc in Publishing and Journalism – *Supervisor of 4 MSc thesis*
2022 to 2023	**MSc Thesis Co-Supervisor**, *University of Verona*, Italy (Scientific Sector: Informatics). MSc in Computer Science and Engineering – *Co-Supervisor of 4 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 thesis*

Research

My main research interests are in the field of formal methods for security and programming languages; with particular attention to program verification and semantics, code protection, malware detection, compilation, distributed systems and functional testing. Some keywords:

- abstract interpretation
- property and hyperproperty verification
- system semantics
- (modular) static analysis
- language-based security
- type systems
- process algebra
- bisimulation theory
- IoT and CPS security

- software watermarking and obfuscation
- metamorphic malware
- event-driven architecture
- attribute-based communication
- distributed systems
- REST APIs
- black-box testing
- 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	**220** (Scholar) :: **140** (Scopus) :: **178** (ResearchGate)
H-index	**8** (Scholar) :: **8** (Scopus) :: **8** (ResearchGate)

Past Positions

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

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.

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 information systems and IoT infrastructures, for a total compensation of € 15'660 before VAT.

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

2018 **Sorbonne Université**, *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*, 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).
Topic: REST API Testing
Main contact: Dr. Saurabh Sinha

2021 to 2022 **Industrial**, *IBM Research*, Haifa (Israel).
Topic: REST API Testing
Main contact: 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

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

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

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

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

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

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

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

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).

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| 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

TCS23	AbU: A Calculus for Distributed Event-driven Programming with Attribute-based Interaction – *Pasqua M. and Miculan, M.* – In: Theoretical Computer Science (pp. 1–40), 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

Articles in International Conferences with Referee

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 (to appear), 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

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 32nd 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

NSAD16 Software Watermarking: A Semantics-based Approach – *Dalla Preda, M. and Pasqua, M.* – In: Proceedings of the 6th Workshop on Numerical and Symbolic Abstract Domains (pp. 71–85), Elsevier, 2016

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

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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

Public Talks

Invited Talks

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

Conference Presentations

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
Nov 11, 2019	**Semantics-based Software Watermarking by Abstract Interpretation**, *University of Verona*, Italy. MSc course "Software Security"
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"
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

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*.

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Verona February 19, 2024