Dr. Davide Maiorca, Ph.D., Assistant Professor[a]

[a]Last Update: July 2024

CONTACT INFORMATION

University of Cagliari
Dept. of Electrical and Electronic Engineering
Research Director @ Joint Lab on Safety and Security of AI (sAIfer Lab)
Director @ ICT4Law and Forensics Lab
Piazza d'Armi, 09123, Cagliari, Italy

Phone: +39 070 675 5758
Fax: +39 070 675 5782
https://saiferlab.ai/people/davidemaiorca
https://sites.unica.it/ict4lawforensics
davide.maiorca@unica.it

RESEARCH INTERESTS

Malware Analysis and Detection on Android, Intel and non-Intel platforms; **IoT Security**; **Malware Detection in Documents and Multimedia (PDF, Office, JavaScript)**; **Adversarial Machine Learning**; **Web Security**.

EDUCATION

University of Cagliari, Cagliari, Italy

Ph.D. (Doctor Europaeus), Electronic Engineering, March 2016

- Thesis: *Design and Implementation of Robust Systems for Secure Malware Detection*
- Advisor: Prof. Giorgio Giacinto
- Ph.D. Course Coordinator: Prof. Fabio Roli
- External Referees: Prof. Urko Zurutuza (Mondragon University, Spain) and Prof. Edgar Weippl (TU Wien, Austria)
- Awarded among the best Italian theses in Computer Security in 2016 by CLUSIT (Italian Association for Computer Security)

M.S., Electronic Engineering, February 2012

- Final Mark: 110/110, *Summa Cum Laude*
- Thesis: *A Pattern Recognition System for Malicious PDF Files Detection*
- Advisor: Prof. Giorgio Giacinto

B.S., Electronic Engineering, October 2008

- Final Mark: 110/110

Secondary High School 'Antonio Pacinotti', Cagliari, Italy

Secondary High School Diploma, July 2004

- Final Mark: 100/100

RESEARCH EXPERIENCE

Senior Assistant Professor (RTD-B) January 2022 - Present
Department of Electrical and Electronic Engineering
University of Cagliari

Junior Assistant Professor (RTD-A) August 2019 - December 2021
Department of Electrical and Electronic Engineering
University of Cagliari
Italian ASN (ING-INF/05) obtained in 2021 as Associate Professor

Postdoctoral Fellow March 2016 - July 2019
Department of Electrical and Electronic Engineering
Pattern Recognition and Applications Lab

Research Assistant (Ph.D. Candidate) January 2013 to March 2016
Department of Electrical and Electronic Engineering
Pattern Recognition and Applications Lab
Supervisor: Prof. Giorgio Giacinto

Visiting Ph.D. Candidate November 2013 to April 2014

Systems Security Group
Ruhr-University of Bochum
Supervisor: Prof. Dr. Thorsten Holz

Research Assistant February 2012 to December 2012
Department of Electrical and Electronic Engineering
Pattern Recognition and Applications Lab
Supervisor: Prof. Giorgio Giacinto

Refereed Publications

1. S. L. Sanna, D. Soi, **D. Maiorca**, G. Fumera, and G. Giacinto. *A Risk Estimation Study of Native Code Vulnerabilities in Android Applications.* Accepted for publication in Journal of Cybersecurity.

2. A. Sanna, F. Cara, **D. Maiorca**, and G. Giacinto. *Oblivion: an open-source system for large-scale analysis of macro-based office malware.* In Journal of Computer Virology and Hacking Techniques, 2024.

3. L. Binosi, P. Mazzini, A. Sanna, M. Carminati, G. Giacinto, R. Lazzeretti, S. Zanero, M.Polino, E. Coppa and **D. Maiorca**. *Do You Trust Your Device? Open Challenges in IoT Security Analysis.* in 21th International Conference on Security and Cryptography (SECRYPT), 2024.

4. E.Massidda, L. Pisu, **D. Maiorca** and G. Giacinto. *Bringing Binary Exploitation at Port 80: Understanding C Vulnerabilities in WebAssembly.* in 21th International Conference on Security and Cryptography (SECRYPT), 2024.

5. D. Soi, L. Regano, **D. Maiorca**, G. Giacinto, and H. Berger. *Can You See It? -NOP! A Practitioners Study.* Poster at Symposium on Usable Privacy and Security (SOUPS) 2024.

6. D. Soi, A. Sanna, **D. Maiorca**, and G. Giacinto. *Enhancing android malware detection explainability through function call graph APIs* in Journal of Information Security and Applications (JISA), vol. 80, February 2024.

7. M. Pintor, G. Orrù, **D. Maiorca**, A. Demontis, L. Demetrio, G.L. Marcialis, B. Biggio, F. Roli. *Cybersecurity and AI: The PRALab Research Experience.* In 3rd Italian CINI Conference on Artificial Intelligence (ITAL-IA), Pisa (Italy), 2023.

8. B. Pala, L. Pisu, S. L. Sanna, **D. Maiorca** and G. Giacinto. *A Targeted Assessment of Cross-Site Scripting Detection Tools.* in 7th Italian Conference on CyberSecurity (ITASEC), 2023.

9. L. Borzacchiello, E. Coppa, **D. Maiorca**, A. Columbu, C. Demetrescu, and G. Giacinto. *Reach Me if You Can: On Native Vulnerability Reachability in Android Apps*, in 27th European Symposium on Research in Computer Security (ESORICS), 2022.

10. A. Janovsky, **D. Maiorca**, D. Macko, V. Matyas, and G. Giacinto. *A Longitudinal Study of Cryptographic API: A Decade of Android Malware*, in 19th International Conference on Security and Cryptography (SECRYPT), 121-133, 2022.

11. F. Meloni, A. Sanna, **D. Maiorca** and G. Giacinto. *Extended Abstract: Effective Call Graph Fingerprinting for the Analysis and Classification of Windows Malware*, in 19th Conference on Detection of Intrusions and Malware & Vulnerability Assessment (DIMVA), Springer, Cagliari, pp. 42-52, 2022.

12. M. Melis, M. Scalas, A. Demontis, **D. Maiorca**, B. Biggio, G. Giacinto, F. Roli. *Do gradient-based explanations tell anything about adversarial robustness to android malware?* in International Journal of Machine Learning and Cybernetics 13(1), 217-232, 2022.

13. G. M. Malandrone, G. Virdis, **D. Maiorca** and G. Giacinto. *PowerDecode: A PowerShell Script Decoder Dedicated to Malware Analysis*, in 5th Italian Conference on CyberSecurity (ITASEC), 2021.

14. F. Cara, M. Scalas, G. Giacinto and **D. Maiorca**. *On the Feasibility of Adversarial Sample Creation Using the Android System API*, in Information (MDPI) – Special Issue - New Frontiers in Android Malware Analysis and Detection, 2020.

15. **D. Maiorca**, A. Demontis, B. Biggio, F. Roli, and G. Giacinto. *Adversarial Detection of Flash Malware: Limitations and Open Issues*, in Computers and Security, vol 96, 2020.

16. **D. Maiorca**, B. Biggio and G. Giacinto. *Towards Adversarial Malware Detection: Lessons Learned from PDF-based Attacks*, in ACM Computing Surveys, vol. 52, n. 4, 2019.

17. M. Scalas, **D. Maiorca**, F. Mercaldo, C. Aaron Visaggio, F. Martinelli, and G. Giacinto. *On the Effectiveness of System API-Related Information for Android Ransomware Detection*, in Computers and Security, vol 86, pp. 162-182, 2019.

18. D. Ugarte, **D. Maiorca**, F. Cara, and G. Giacinto. *PowerDrive: Accurate De-Obfuscation and Analysis of PowerShell Malware*, in 16th Conference on Detection of Intrusions and Malware & Vulnerability Assessment (DIMVA), Sprin- ger, Gothenburg, Sweden, pp. 240-259, 2019.

19. A. Demontis, M. Melis, B. Biggio, **D. Maiorca**, D. Arp, K. Rieck, I. Corona, G. Giacinto, and F. Roli, *Yes, Machine Learning Can Be More Secure! A Case Study on Android Malware Detection*, in IEEE Transactions on Dependable and Secure Computing, vol 16, n° 4, pp. 711-724, 2019.

20. **D. Maiorca** and B. Biggio, *Digital Investigation of PDF Files: Unveiling Traces of Embedded Malware*, in IEEE Security and Privacy: Special Issue on Digital Forensics, vol 17, n. 1, pp. 63-71, 2019.

21. B. Kolosnjaji, A. Demontis, B. Biggio, **D. Maiorca**, G. Giacinto, C. Eckert, and F. Roli, *Adversarial Malware Binaries: Evading Deep Learning for Malware Detection in Executables*, in 26th European Signal Processing Conference (EUSI-PCO '18), 2018.

22. M. Melis, **D. Maiorca**, B. Biggio, G. Giacinto, and F. Roli, *Explaining Black-box Android Malware Detection*, in 26th European Signal Processing Conference (EUSIPCO '18), 2018.

23. **D. Maiorca**, F. Mercaldo, G. Giacinto. A. Visaggio, F. Martinelli. *R-PackDroid: API Package-Based Characterization and Detection of Mobile Ransomware*, in 32th ACM Symposium on Applied Computing (SAC), Marrakech (Morocco), 2017.

24. **D. Maiorca**, P. Russu, I. Corona, B. Biggio and G. Giacinto. *Detection of Malicious Scripting Code through Discriminant and Adversary-Aware API Analysis*, in 1st Italian Conference on CyberSecurity (ITASEC), 17-20th January 2017, Venice (Italy).

25. J.Hoffmann, T. Rytilahti, **D. Maiorca**, M. Winandy, G. Giacinto and T. Holz. *Evaluating Analysis Tools for Android Apps: Status Quo and Robustness against Obfuscation*, in Proceedings of the 6th ACM Conference on Data and Application Security and Privacy (CODASPY 2016), March 9-11th 2016, New Orleans (USA).

26. T. Hupperich, **D. Maiorca**, M. Kührer, T. Holz, and G. Giacinto, *On the Robustness of Mobile Device Fingerprinting*, in 31st Annual Computer Security and Applica- tions Conference (ACSAC 2015), 7-10th December 2015, Los Angeles, USA, pp. 191-200.

27. M. Aresu, D. Ariu, M. Ahmadi, **D. Maiorca**, and G. Giacinto, *Clustering Android Malware Families by Http Traffic*, in 10h International Conference on Malicious and Unwanted Software (MALCON 2015), October 20-22th 2015, Fajar- do, Puerto Rico, USA.

28. **D. Maiorca**, D. Ariu, I. Corona, and G. Giacinto, *An Evasion Resilient Approach to the Detection of Malicious PDF Files*, in Information Systems Security and Privacy (Communication in Computer and Information Science), vol 576, Springer, 2015, pp. 68-85.

29. **D. Maiorca**, D. Ariu, I. Corona, M. Aresu, and G. Giacinto, *Stealth Attacks: An Extended Insight into the Obfuscation Effects on Android Malware*, Computers And Security (Elsevier), vol 51 (June), pp. 16-31, 2015.

30. **D. Maiorca**, D. Ariu, I. Corona, and G. Giacinto, *A Structural and Content-Based Approach for a Precise and Robust Detection of Malicious PDF Files*, Proceedings of the 1st International Conference on Information Systems Security and Privacy (ICISSP), 9-11th February 2015, Angers, France, pp. 27-36.

31. I. Corona, **D. Maiorca**, D. Ariu, and G. Giacinto, *Lux0R: Detection of Malicious PDF-embedded JavaScript code through Discriminant Analysis of API References*, in AISec'14: Proceedings of the 2014 ACM Workshop on Artificial Intelligence and Security, co-located with CCS '14, Scottdale, Arizona, USA, 2014.

32. B. Biggio, I. Corona, B. Nelson, B. I. P. Rubinstein, **D. Maiorca**, G. Fumera, G. Giacinto, and F. Roli, *Security Evaluation of Support Vector Machines in Adversarial Environments*, in Support Vector Machines Applications, Y. Ma e Guo, G. Springer International Publishing, 2014, pp. 105-153.

33. B. Biggio, I. Corona, **D. Maiorca**, B. Nelson, N. Srndic, P. Laskov, G. Giacinto, and F. Roli, *Evasion attacks against machine learning at test time*, in European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML PKDD), 2013, vol 8190, pagg 387-402.

34. **D. Maiorca**, I. Corona, and G. Giacinto, *Looking at the Bag is not Enough to Find the Bomb: an Evasion of Structural Methods for Malicious PDF Files Detection*, in 8th ACM Symposium on Information, Computer and Communications Security (ASIACCS), Hangzhou, China, 2013.

35. **D. Maiorca**, G. Giacinto, and I. Corona, *A Pattern Recognition System for Malicious PDF Files Detection*, in MLDM - International Conference on Machine Learning and Data Mining, Berlin, 2012, vol 7376, pp. 510-524.

Scientific Activities

Workshop Chair

- *The 2nd Italian Cyberchallenge.it Workshop*

Local Arrangements Chair
- *The 19th Conference on Detection of Intrusions and Malware & Vulnerability Assessment* (DIMVA 2022)

Guest Editor
- Special Issue - *New Frontiers in Android Malware Analysis and Detection* for the journal *Information* (MDPI)

Editorial Board Member
- *Information Security Journal: A Global Perspective* (Taylor Francis)
- *Journal of Computer Virology and Hacking Techniques* (Springer)
- *Frontiers in Computer Science - Computer Security*

Program Committee Member (Conferences)
- *ACM Conference on Computer and Communications Security (CCS) 2024*
- *Annual Computer Security and Applications Conference* (ACSAC) (2019 and 2022-2024 together with Artifacts Evaluation Committee)
- *6th Italian Conference on CyberSecurity* (ITASEC), 2022-2024
- *European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases* (ECML PKDD) – Journal Track, 2021-2022
- *ACM International Conference on Information Technology for Social Good* (GOODIT), 2021
- *ACM Symposium on Applied Computing* (IoT Track) 2018-2020

Program Committee Member (Workshops)
- *Workshop on Machine Learning for CyberSecurity* (MLCS - Co-located with ECML PKDD), 2022-2023-2024
- *Deep Learning Security and Privacy Workshop* (DLSP - Co-Located with IEEE S&P), 2023-2024
- *Private, Secure, Trustworthy AI workshop* (PriST-AI - Co-Located with ESORICS), 2023
- *ACM Workshop on Robust Malware Analysis* (WORMA - Co-located with ACM ASIACCS), 2022-2024
- *ACM Workshop on Artificial Intelligence and Security* (AISEC - Co-located with ACM CCS) 2017-2023
- *1st European Workshop on Cyber Security Education and Practice* (CSEP - Co-located with IEEE Euro Security and Privacy)

Student Program Committee Member
- *37th IEEE Symposium on Security and Privacy* (IEEE S&P) (2016)

Reviewer for Journals
- *ACM Transactions on Privacy and Security* (TOPS) - **Distinguished Reviewer**
- *ACM Computing Surveys*
- *IEEE Transactions on Secure and Dependable Computing*
- *IEEE Transactions on Information Forensics and Security*
- *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*
- *IEEE Transactions on Neural Networks and Learning Systems*
- *IEEE Transactions on Artificial Intelligence*
- *Computers and Security*, Elsevier
- *Journal of Information Security and Applications*, Elsevier
- *Journal of Parallel and Distributed Computing*, Elsevier
- *International Journal on Machine Learning and Cybernetics*, Elsevier
- *IEEE Access*
- *Future Generation Computer Systems*, Elsevier
- *Journal of Systems and Software*, Elsevier
- *Applied Computing and Informatics*, Elsevier

- *Security Informatics*
- *Journal of Cybersecurity*, Oxford Academic

External Sub-Reviewer

- *1st Italian Conference on CyberSecurity* (ITASEC 2017)
- *8th ACM Workshop on Artificial Intelligence and Security* (AISEC 2015)

Conference Talks

Presentations

- Italian Cybercrime Conference (2024)
- 16th Conference on Detection of Intrusions and Malware & Vulnerability Assessment (DIMVA 2019)
- 3rd Italian Conference on CyberSecurity (ITASEC 2019)
- 2nd Italian Conference on CyberSecurity (ITASEC 2018)
- 32th ACM Symposium on Applied Computing (SAC 2017)
- 1st International Conference on Information Systems Security and Privacy (ICISSP 2015)
- 8th ACM Symposium on Information, Computer and Communications Security (ASIACCS 2013)

Invited Talks

- *Keynote speaker* at the 2th Workshop on Machine Learning for CyberSecurity (Co-located with ECML PKDD 2020).

Projects

Principal Investigator

- SETA. *Studying thE impact of anti-analysis Techniques in IoT security evAluations.* Funded by the Italian Ministry of University with the PRIN (Progretti di Ricerca di Rilevante Interesse Nazionale) grant through the National Recovery and Resilience Plan (PNRR). Budget 230,000€, Acceptance rate 16%. 2024-2026.

WP Leader

- SERICS. (*Security and Rights in the CyberSpace - Spoke 3 - COVERT*). Funded by the Italian Ministry of University with the PRIN (Progretti di Ricerca di Rilevante Interesse Nazionale) grant through the National Recovery and Resilience Plan (PNRR). 2024-2026.
- SUSTAIN. *Flexible Sensors for secUre and TruSTed crowdsensing environmentAl applicatIoNs.* Funded by the Sardinian Regional Administration. 2023-2025.
- INSIEME. *Intelligent Systems for Integrated Health Management* (2017-2021) – Horizon 2020 – PON 2014/2020 (Responsible for the Working Unit on Goal 4 - Development of Security Module and Server-Side Support).

Project Manager

- PISDAS. *Piattaforma Integrata Servizi Digitali Avanzati Sicuri.* Funded by the Sardinian Regional Administration. Co-Funded by the European Union - FESR 2007-2013 (Project Manager for the University of Cagliari).
- INCLOSEC. *Innovery Cloud Security.* Funded by the Sardinian Regional Administration. Co-Funded by the European Union - FESR 2014-2020 (Project Manager for the University of Cagliari).
- INN-BEDAE. *Innovery Big Energy Data Analytics Efficiency.* Funded by the Sardinian Regional Administra- tion. Co-Funded by the European Union - FESR 2014-2020 (Project Manager for the University of Cagliari).

Teaching Experience

Main Lecturer (Courses)

- Web Security and Malware Analysis (60 hrs - 6 ECTS) 2019-Current
  Master of Science in Computer Engineering,

Cybersecurity and Artificial Intelligence,
Department of Electrical and Electronic Engineering,
University of Cagliari, Italy

- Computer Forensics Techniques (30 hrs - 5 ECTS) 2019-Current
  Master of Science in Computer Engineering,
  Cybersecurity and Artificial Intelligence,
  Department of Electrical and Electronic Engineering,
  University of Cagliari, Italy
- Cybersecurity (25 hrs - 5 ECTS) 2022-Current
  2nd Level Master's Degree in Digitalisation of The
  Electricity System for the Energy Transition,
  University of Cagliari and Terna SpA

Main Lecturer (Seminars)

- Reverse Engineering and Low-Level Program Analysis 2019-Current
  (Seminar - 24 hrs - 3 ECTS)
  Ph.D. Program in Electronic Engineering and Computer Science,
  Department of Electrical and Electronic Engineering,
  University of Cagliari, Italy
- Introduction to Web Security and Mobile Forensics 2022
  (8 hours)
  Second Level Master Program on Security Awareness,
  University of Cagliari, Italy
- Mobile Security (Seminar) 2016-2017
  Master of Science in Electronic Engineering,
  Department of Electrical and Electronic Engineering,
  University of Cagliari, Italy

Teaching Assistant

- Computer Security 2016-2017
  Instructor: Prof. Giorgio Giacinto,
  Master of Science in Electronic Engineering,
  Department of Electrical and Electronic Engineering,
  University of Cagliari, Italy
- Operating Systems 2014-2017
  Instructor: Prof. Giorgio Giacinto,
  Master of Science in Electronic Engineering,
  Department of Electrical and Electronic Engineering,
  University of Cagliari, Italy
- Electronic Calculators 2012
  Instructor: Prof. Fabio Roli
  Bachelor of Science in Electronic Engineering,
  Department of Electrical and Electronic Engineering,
  University of Cagliari, Italy

Assistant for Faculty Activities

- Department of Electrical and Electronic Engineering 2011
  University of Cagliari, Italy

Student Research Advising

Ph.D. Supervisor

- Diego Soi, Ph.D. Program in Electronic Engineering and Computer Science, University of Cagliari, 2023-2026.
- Lorenzo Pisu, Ph.D. Program in Electronic Engineering and Computer Science, University of Cagliari, 2022-2025.
- Alessandro Sanna, Ph.D. Program in Electronic Engineering and Computer Science, University of Cagliari, 2021-2024.

Thesis Advisor

- Maria Chessa, *Securing Against Ransomware: A Study on the Effectiveness of Detection and Mitigation Tools*, Master of Science in Computer Engineering, CyberSecurity and Artificial Intelligence, A.Y. 2023-2024.
- Emmanuele Massidda, *Bringing Binary Exploitation to Port 80: Understanding C Vulnerabilities in WebAssembly*, Master of Science in Computer Engineering, CyberSecurity and Artificial Intelligence, A.Y. 2023-2024.
- Matteo Asuni, *Effective Graphical Visualization of Vulnerabilities in C and C++ Programs* , Master of Science in Computer Engineering, CyberSecurity and Artificial Intelligence, A.Y. 2023-2024.
- Amal Golli, *A Comprehensive Analysis of Cloud Security Posture Management Practices*, Master of Science in Computer Engineering, CyberSecurity and Artificial Intelligence, A.Y. 2022-2023.
- Nicola Crobu, *An Ethical Dilemma: Study and Categorization of Deceptive Android Applications*, Master of Science in Computer Engineering, CyberSecurity and Artificial Intelligence, A.Y. 2022-2023.
- Maria Jose Baffigo, *Study And Analysis of Automatic Unpacking Techniques for Malware Detection*, Master of Science in Computer Engineering, CyberSecurity and Artificial Intelligence, A.Y. 2021-2022.
- Bruno Pala, *Analysis and Evaluation of Web Application Vulnerability Scanners against Cross Site Scripting*, Master of Science in Computer Engineering, CyberSecurity and Artificial Intelligence, A.Y. 2021-2022.
- Gianluca Pala, *On the Effectiveness of Graphs for Android Malware Detection*, Master of Science in Computer Engineering, CyberSecurity and Artificial Intelligence, A.Y. 2021-2022.
- Diego Soi, *An Explainable Deep Learning approach for the detection of Android Malware*, Master of Science in Computer Engineering, CyberSecurity and Artificial Intelligence, A.Y. 2021-2022.
- Federico Loi, *Are Italian.tweets safe? Study and analysis of Italian URLs on Twitter*, Master of Science in Computer Engineering, CyberSecurity and Artificial Intelligence, A.Y. 2021-2022.
- Lorenzo Pisu, *A security assessment of the server-side template injection vulnerability*, Master of Science in Computer Engineering, CyberSecurity and Artificial Intelligence, A.Y. 2021-2022.
- Silvia Lucia Sanna, *A risk estimation study of native code vulnerabilities in Android applications*, Master of Science in Computer Engineering, CyberSecurity and Artificial Intelligence, A.Y. 2020-2021.
- Luca Minnei, *Study and analysis of Adware applications on the Android platform*, Bachelor of Science in Computer Science, A.Y. 2020-2021.
- Filippo Pitzalis, *Study and Analysis of Native Libraries Embedded in Android Malware*, Master of Science in Computer Engineering, CyberSecurity and Artificial Intelligence, A.Y. 2019-2020.
- Luca Puzzoni, *Studio ed Analisi di Librerie Crittografiche impiegate da Malware Android*. Bachelor of Science in Computer Science, A.Y. 2019-2020.
- Alessandro Sanna, *Dynamic Analysis and Instrumentation of Interaction-based Office Malware*. Master of Science in Computer Engineering, CyberSecurity and Artificial Intelligence, A.Y. 2019-2020.
- Francesco Meloni, *Advanced Call Graph Fingerprinting for the Analysis and Classification of Windows Malware*. Master of Science in Computer Engineering, CyberSecurity and Artificial Intelligence, A.Y. 2019-2020.
- Giuseppe Malandrone, *Studio e Sviluppo di un Rilevatore di Attacchi Avanzati Basati su PowerShell*. Master of Science, Electronic Engineering, A.Y. 2018-2019.

Thesis Co-Advisor

- Laura Pucci, *A Study of Machine Learning-Based Android Malware Detectors.* Advisor: prof. Giorgio Giacinto. Bachelor of Science, Electrical, Electronic and Computer Engineering, A.Y. 2018-2019.
- Lorenzo Mulas, *Studio ed analisi di applicazioni grayware nella piattaforma Android.* Advisor: prof. Giorgio Giacinto. Bachelor of Science, Electrical, Electronic and Computer Engineering, A.Y. 2018-2019.
- Fabrizio Cara, *Malware Stealth: Studio e Creazione di Attacchi Evasivi Contro Dispositivi Android.* Advisor: prof. Giorgio Giacinto. Master of Science, Telecommunications Engineering, A.Y. 2017-2018.
- Michele Scalas, *Study and Development of an Android Application for Automatic Ransomware Detection.* Advisor: prof. Giorgio Giacinto. Master of Science, Telecommunications Engineering, A.Y. 2016-2017.
- Alessandro Medda, *Studio e sviluppo di un analizzatore avanzato per la rilevazione di attacchi Flash.* Advisor: prof. Giorgio Giacinto. Master of Science, Telecommunications Engineering, A.Y. 2015-2016.
- Efisio Caschili, *Studio ed Implementazione di un sistema di Pattern Recognition per la rilevazione di malware Office.* Advisor: prof. Giorgio Giacinto. Master of Science, Telecommunications Engineering, A.Y. 2014-2015.
- Maria Elena Chiappe, *Static Analysis and Detection of Malicious ActionScript Files through Structural and Content-Based Analysis.* Advisor: prof. Giorgio Giacinto. Bachelor of Science, Electrical and Electronic Engineering, A.Y. 2014-2015.
- Marco Aresu, *Analysis and Test of Advanced Techniques to the Evasion of Android Malware Detectors.* Advisor: prof. Giorgio Giacinto. Master of Science, Telecommunications Engineering, A.Y. 2013-2014.
- Simone Moro, *Advanced Attacks on the Android Platform. Analysis, Development and Implementation of Deliberately Vulnerable Software.* Advisor: prof. Giorgio Giacinto. Master of Science, Telecommunications Engineering, A.Y. 2012-2013.
- Luigi Meloni, *Analysis and Detection of Obfuscated Android Malware.* Advisor: prof. Giorgio Giacinto. Master of Science, Electronic Engineering, A.Y. 2012-2013.
- Antonio Cau, *Analysis of the Mobile Botnets Characteristics and Detection Tools.* Advisor: prof. Giorgio Giacinto. Bachelor of Science, Electronic Engineering, A.Y. 2012-2013.
- Roberta Mameli, *Analysis and Test of Evasion Techniques against PDF Malware Detectors.* Advisor: prof. Giorgio Giacinto. Bachelor of Science, Electronic Engineering, A.Y. 2012-2013.
- Mauro Marongiu, *Development and Test of a System for the Detection of Malicious Javascript Files.* Advisor: prof. Giorgio Giacinto. Master of Science, Electronic Engineering, University of Cagliari, Italy. A.Y. 2011-2012.

Capture the Flag (CTF) Activities

Founder and President of the Sardinia Len Association 2024-Current

CTF Player and Captain of the Srdnlen Team 2019-Current

- CTFTime 2023 Ranking: 47th (Worldwide)
- Second place at Cybercup.it (https://cybercup.it/) 2023 and 2024.
- Best CTF Results: 1st place in Snake CTF 2023, 2nd place in Hackappatoi CTF '22 and Team Italy CTF '22, 3rd place in L3akCTF 2024, RITSEC CTF 2023, Killer Queen CTF 2021 and PBjar CTF '21, 4th place in b01lers CTF 2023 and SPbCTF's Student CTF 2021 Finals (A/D).
- Webpage: `https://srdnlen.it`

CTF Teaching, Coaching and Organization 2019-Current

- Responsible for the CyberChallenge.it Project for the University of Cagliari (2020-Current).
- Lecturer for the CyberChallenge.it Project for the University of Cagliari (reverse engineering and binary exploitation) - (2019-Current)

- Coach of the University of Cagliari team for the Attack and Defense finals of the CyberChallenge.it project (winner in 2021).
- Organizer of the Cybercup.it (https://cybercup.it) Project (2023-Current).
- Organizer of the Srdnlen CTF (https://ctftime.org/event/1766).
- Trainer at the ENISA Team Europe's Bootcamp (Salzburg, 2024).

Additional Activities

Foreign Visits

- Lecturer at the Jordan University and Princess Sumaya University of Technology (Computer and Mobile Forensics - February 2020).
- Visiting Researcher at Masaryk University - Prof. Vashek Matyas (January-February 2020)

Forensic Consultations

- Technical advisor (Italian CTP) for legal cases

Memberships

- ACM (2016-Current)
- IEEE (Student Member 2013-2016, Member 2016-Current)
- Computer Society (2016-Current)
- IEEE Systems, Man and Cybernetics (SMC) (2013-Current)
- CVPL (2013-Current)
- INSTICC (2022)
- Professional Order of Engineers of Cagliari (n. 7994) (2013-Current)

Other Roles

- Chair of the IEEE Cagliari Student Branch (2013-2015)
- Chair of the IEEE Cagliari Systems, Man and Cybernetics (SMC) Society Chapter (2014-2015)