CURRICULUM VITÆ

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Birthday and birthplace: 1st November, 1977; Verona (Italy)

Citizenship: Italian

Citizenship: Italian (native), English (fluent)

Education

- **(2007)** PhD in Computer Science (CS), University of Verona
- **(2003)** Master (Laurea) degree in Computer Science (CS). University of Verona

Past and current positions:

- **(February 2021 – now)** Member of the Board of Directors of the Center of Security and Crime Sciences, University of Trento - University of Verona.
- **(2020–now)** Associate Professor in Computer Science, Dipartimento di Informatica, University of Verona.
- **(March 2014 2016 - April 2020)** Assistant Professor, Dipartimento di Informatica, University of Verona.
- **(March 2013 - February 2014)** Post-doc at Dipartimento di Informatica, University of Verona.
- **(October 2011 - February 2013)** Post-doc at Dipartimento di Scienze dell'Informazione, University of Bologna.
- **(June 2011 - September 2011)** post-doc at INRIA Spohia Antripolis - Mediterranee.
- **(August 2010 - March 2011)** scholarship funded by Regione Emilia Romagna, Italy.
- **(January 2008 - August 2008)** Collaboration with the Department of Information and Communication Technology, University of Trento, funded by the European FET Project Re-Trust (2006-2009).
- **(May 2007 - July 2010)** Post-doc at Dipartimento di Informatica, University of Verona.
- **(January 2007 - April 2007)** post-doc at Department of Information and Communication Technology, University of Trento, funded by the European FET Project Re-Trust (2006-2009).
- **(January 2004 - December 2006)** PhD student at the Dipartimento di Informatica, University of Verona.

Main research interests

Abstract interpretation, program analysis, program semantics.

Program transformation, software protection, code obfuscation, software watermarking, software security.

Institutional responsibilities

(2022 – now) Referent for the Comunication of the Dipartimento di Informatica, University of Verona.
(2019 – now) Manager of the Cyberchallenge program for the University of Verona (https://cyberchallenge.it/).
(2019 – oggi) Member of the Academic Board of the PhD in Computer Science - University of Verona.
(2014 – now) Member of the Computer Science Teaching Board, Department of Computer Science - University of Verona.

Maternity leave

> May 2018 - October 2018
> November 2011 - April 2012
> November 2009 - April 2010

Description of the Research

My research interests include abstract interpretation and formal methods applied to various aspects of computer science including program analysis, program semantics, program transformation, code integrity protection, code intellectual property protection, automatic malware analysis and identification, model checking.

I am the author of more than 50 articles in international journals and conferences. In Google Scholar: more than 1400 citations, H-index 19, i10-index 28. The article that most marked my career is:

> M. Dalla Preda, M. Christodorescu, S. Jha e S. Debray. A semantics-based approach to malware detection. *34th ACM Symposium on Principles of Programming Languages POPL 2007* [47].

This article is the result of the research work carried out during my visit to Prof. Saymua Debray at the University of Arizona during my last year of PhD. My knowledge of formal methods and abstract interpretation applied to code semantics combined with the experience of the other authors in the field of malware analysis led to the definition of a formal framework for modeling and verifying the robustness of antiviruses with respect to evasion used by malware writers. This work helped to consolidate my international visibility and characterized my research activity in the following years.

Summary of main achievements

Formalization of code obfuscation techniques using abstract interpretation and formal semantics: The term code obfuscation identifies transformations of programs that preserve the functionality of the code making it more complicated to analyze by automatic tools. Obfuscation is used by code developers to protect the intellectual property of the code by making the program more difficult to understand and therefore to break, and by malware writers to circumvent automatic recognition techniques. We used the formal theory of abstract interpretation to model obfuscation techniques in order to understand their limits and potential, highlighting the effects that obfuscation has on the accuracy of the static analysis results [13, 50, 49, 48]. We then used the obtained results to define a general framework for modeling and testing antivirus robustness against obfuscation techniques commonly used by malware [15, 47]. We then investigated the relationship between the incompleteness of static analysis tools and the power of obfuscation, i.e. the ability of obfuscation to confuse an attacker interested in the results of that specific analysis, in order to suggest strategies for developing obfuscation capable of defeating a given [7, 35, 10] attacker. We then formalized the effects of obfuscation techniques on the precision of the [18, 19] dynamic analysis.

In the context of remote entrusting, we have proposed techniques for protecting the intellectual property of code based on program slicing and obfuscation. The purpose is to be able to guarantee to the server, which has only remote access to the client, the reliability of the applications running on the client [14, 46, 44].

Malware detection and program similarity: We have shown that the existing tools for the automatic identification of Android malware are unable to recognize [9] obfuscated malware. In order to identify obfuscated variants of malware it is necessary to define recognition methods that are based on semantic characteristics of the code or that are able to recognize programs that are semantically similar even if syntactically different [39]. We have therefore developed automatic tools capable of recognizing similar programs based on semantic properties [36, 26, 24, 20], or by applying deep learning algorithms to the representation of programs as images [5, 23]. We then studied the problem of code similarity in the context of the attribution of code to authors[2, 22].

Many methods of similarity analysis of binary code can be seen as particular abstract interpretations of code modeled as symbolic finite state automata (SFA). We therefore introduced the abstract-SFA notion

and studied the relationship between the syntactic, topological and semantic abstractions of the SFA and the effects of these abstractions on the language recognized by the SFA [31, 32, 29] and how all this can be applied to malware detection [34].

Formalization of software watermarking by abstract interpretation and formal semantics: The term software watermarking refers to code transformations that hide a signature within programs to demonstrate ownership. We have proposed a formal framework, based on program semantics and abstract interpretation, for modeling software watermarking techniques and their related secrecy, resilience, transparency and accuracy properties. In particular, it is observed that the ability of an attacker to identify the watermark can be expressed as a completeness property of the analysis [6, 25]. We have proposed a software watermarking algorithm that exploits the relationship between semantics and syntax [45].

Abstract interpretation and program analysis: We introduced the notion of phase semantics to formalize the behavior of self-modifying code (such as some malware) and proved its correctness by showing that it is an abstract interpretation of the trace semantics [12, 43]. We introduced the concept of metamorphic signatures: abstract representations of code capable of recognizing all variants generated by self-modifying malware, and we specified them in terms of indexed grammars [4]. We therefore studied the properties of the languages recognized by the indexed grammars and investigated their relationship with the other languages in the Chomsky hierarchy [21]. Completeness is a desirable property of abstract interpretation as it represents the absence of false positives in the analysis. Completeness is rarely satisfied and in fact we are dealing with incomplete analyzes and therefore with false positives. We have therefore proposed a weakening of the concept of completeness, which we call partial completeness, where a limit is set on the amount of false positives of the analysis. In this way it is possible to distinguish and measure the different levels of imprecision of the analyzes opening new horizons in the analysis of the code [3, 16].

Given the immutable nature of the blockchain, it is important to be able to detect security issues before deploying smart contracts. Unfortunately, the analysis of smart contracts is complicated by the absence of the source code. To support the analysis of the compiled code we proposed a new approach based on symbolic execution for extracting an accurate control flow graph from bytecode generated by the Ethereum Virtual Machine [1, 17].

Distributed Systems: The development of distributed applications free from deadlocks and race-conditions is complex especially in the presence of dynamic updates. We have introduced an approach based on choreographic programming that allows you to specify which parts of the application can be updated and to generate applications without deadlocks and race conditions at runtime [8, 30, 33, 11]. We have studied the problem of service integration in the context of service-oriented architectures [37, 38, 41].

Granted awards

(August 2006) QinetiQ (www.qinetiq.com) Award for research contributions with strong practical applications at the Doctoral Symposium co-located with the conference Formal Methods 2006, Hamilton, Canada, Agosto 2006.

(October 2007) Special mention from the commission of the Italian chapter of the EATCS (European Association for Theoretical Computer Science) which assigns the annual prize for the best PhD thesis in theoretical computer science.

Invited talks

(2022) Webinar on Cybersecurity, organized by Unioncamere del Veneto for increasing the security awareness in industry. July 13th 2022

(2021) Speaker at the event CyberSecurity: the importance of IT defenses in the post-pandemic within mcT Cyber Security - Mostra Fiera Cyber Security, Milano. November 26th 2021.

(2021) Technology as a Social Fact Prof. Ryan Calo Lane Powell & D. Wayne Gittinger Professor of Law,

University of Washington, Presents Lorenzo Picotti - Full professor in Criminal Law, University of Verona, Discussants: Mila Dalla Preda - Associate Professor in Computer Science, University of Verona, Massimiliano Badino - Associate Professor in Philosophy of Science, University of Verona, Roberto Flor - Associate Professor in Criminal Law, University of Verona. October 20th 2021.

(2021) Speaker at the event Computer security: how to defend yourself against cyber criminals. Organized by Dipartimento di Informatica dell'University of Verona. April 21st 2021.

(2019) Dagstuhl Seminar 19331, Title: Software Protection Decision Support and Evaluation Methodologies. Organized by Mila Dalla Preda (Univeristy of Verona, Italy), Bjorn De Sutter (Ghent University, Belgium), Christina Collberg (University of Arizona - Tucson, US) and Brecht Wyseur (NAGRA Kudelski Group SA – Cheseaux, CH). August 11-16 2019.

(2017) Dagstuhl Seminar Seminar 17281, Title: Malware Analysis: From Large-Scale Data Triage to Targeted Attack Recognition. Organized by: Saumya K. Debray (University of Arizona - Tucson, US), Thomas Dullien (Zürich, CH), Arun Lakhotia (University of Louisiana - Lafayette, US), Sarah Zennou (Airbus Group - Suresnes, FR). July 9-14 2017.

(2014) Speaker at the Cyber Security Day in Verona. October 6th 2014.

(2014) Dagstuhl Seminar 14241 - Challenges in Analysing Executables: Scalability, Self-modifying Code and Synergy. Organizers: Roberto Giacobazzi (University of Verona, IT), Axel Simon (TU Munchen, DE), Sarah Zennou (EADS-Suresnes, FR). June 9-13 2014.

(2011) Seminar entitled "Modeling Metamorphism by Abstract Interpretation", at the Center for Advanced Computer Studies, University of Louisiana at Lafayette. May 24th 2011.

(2008) Seminar entitled "Advances in Code Obfuscation and Malware Detection by Abstract Interpretation", Dipartimento di Scienze dell'Informazione, University of Bologna. November 18 2008.

(2007) Seminar entitled "Code Obfuscation and Malware Detection by Abstract Interpretation", Computer Science Department, University of Madison, Wisconsin, USA. July 18th 2007.

(2006) Seminar entitled "Code Obfuscation and Malware Detection by Abstract Interpretation", Department of Information and Communication Technology, University of Trento. November 9th 2006.

(2004) Seminar entitled "Completeness Refinement in Abstract Symbolic Trajectory Evaluation", Dipartimento di Informatica, University di Verona. Luglio 2004.

Scientific advisor of young researchers

Doctor Vittoria Cozza, assistant professor in CS (February 2022 - January 2025).

Doctor Marco Campion, post-doc on program analysis (April 2021 - March 2023).

Doctor Michele Ianni, post-doc on binary code analysis (October 2019 - October 2021).

Phd Student Niccolò Marastoni, (October 2017 - December 2020).

Contribution to the scientific community

(2023) General Chair of the Workshop on Attacks and Software Protection WASP 2023, co-located with ESORICS 2023, The Hague, The Netherlands, September 2023.

(2020) General Chair of the Workshop on Software Attacks and Defenses SAD 2020, co-located with Euro S&P 2020, June 19th 2020, Genova, Italy.

(2020) General Chair of the PhD Forum @ITASEC 2020, Annual Italian Conference on Cybersecurity. February 6th 2020, Ancona, Italy.

(2019) Organizers of the Dagstuhl Seminar 19331, entitled: Software Protection Decision Support and Evaluation Methodologies. Organizers Mila Dalla Preda (University of Verona, Italy), Bjorn De Sutter (Ghent University, Belgium), Christian Collberg (University of Arizona - Tucson, US) and Brecht Wyseur (NAGRA Kudelski Group SA – Cheseaux, CH). Agosto 11th - 16th 2019.

(2018 - 2019) Steering Committee of the ACM Software Security, Protection and Reverse Engineering Workshop 2018-2019.

(2013-2017) Co-chair of the ACM Software Security, Protection and Reverse Engineering Workshop, SSPREW 2017-2016-2015-2014-2013.

Research Projects

BINTRACE : Binary Similarity Analysis based on Execution Traces. Joint Project dell'University of Verona with Relatech SPA. Role: Principal Investigator. Funded: 45K Euro. January 2020 - January 2022.

SMALAWI : Smart Label Wine Funded by Regione Veneto. Partners: Vignaioli Veneti (PI), Dipartimento di Economia Aziendale, Dipartimento di Informatica - University of Verona. Role: Active participation in research. March 2019 - March 2022.

Cyber Risk Management e Resilienza nelle Operations : risk analysis models, management strategies and insurance coverage. Funded by Fondazione Cariverona. Partners: Dipartimento di Economia Aziendale (PI), Dipartimento di Informatica - University of Verona. Role: Active participation in research. October 2019 - October 2021.

ASPIS : Early threat detection by approximate similarity analysis. Joint Project dell'University of Verona con Poste Italiane. Role: Principal Investigator. Funded: 47K Euro. January 2017 - January 2019.

FACE : Formal Avenue for Chasing Malware (2014-2018). Funded by Italian Ministery of Research. Partners: university of Milano and Verona (PI). Role: Principal Investigator. Funded: 522K Euro. (acceptance rate 5,10%). March 2014 - March 2018.

Shadowcode: code protection in .net by abstract and dynamic steganography. Joint Project dell'University of Verona with Consorzio Veneto dell'Informatica e del Tecnologico Avanzato (VITA).Role: Active participation in research. March 2009 - March 2011.

PRIN2007 Analisi e protezione del software mediante interpretazione astratta. PRIN 2007, Progetto MIUR COFIN coordinato tra le University of Padova, Parma e Verona. Role: Active participation in research. September 2008 - Semptember 2010.

RE-TRUST : Remote EnTrusting by RUn-time Software auThentication (2007-2010), Europeo FET project, partners: University of Trento, Politecnico di Torino, Gemalto (France), Katholieke Universiteit (Leuven-Belgium) and SPIIRAS St.Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences (Russia). Role: Active participation in research.

Industrial innovation

(2021) Co-founder of Vero4Chain s.r.l., a spin-off company of the U. of Verona for blockchain applications and services and smart contract analysis.

(2021 – now) Member of the Board of Directors of the Center of Security and Crime Sciences, University of Trento. The inter-university center aims to promote training and research on security, intended both as security and as safety.

(2018-2019) Tetra Pak Packaging Solutions S.p.a., Via Delfini, 1, Modena. Consulting activity for the development of specific security solutions.

(2019 - 2020) DANIELI AUTOMATION is part of the Danieli Group, a multinational company that operates in the steel industry. We have collaborated with the DANIELI AUTOMATION headquarters in Udine. Consulting activity for the development of specific solutions for the protection of the intellectual property of software.

Scientific Collaborations

Prof. Natalia Stakhanova, University of Saskatchewan, Canada. (since 2013). Relevant publications [2, 22].

Prof. Arun Lakhotia, University of Louisiana at Lafayette - Center for Advanced Computers Studies, Lafayette, Louisiana USA (since 2011). Relevant publications [32, 36, 39].

Prof. Stefano Zanero, Politecnico di Milano, Italia (since 2014). We have collaborated in the management of the FIRB progect and in the Cyberchallenge project.Relevant publications [28].

Prof. Saumya Debray, University of Arizona - Department of Computer Science, Tucson, Arizona USA (since 2006). Relevant publications [12, 15, 43, 47].

Prof. Christian Collberg, University of Arizona - Department of Computer Science, Tucson, Arizona USA (since 2006). We have organized the Dagstuhl Seminar 19331. Relevant publications [14, 46].

Prof. Somesh Jha, University of Wisconsin - Department of Computer Science, Madison, Wisconsin USA (since 2006). Relevant publications [15, 47].

Prof. Bjorn De Sutter, Department of Electronics and Information Systems, Ghent University, Belgium (since 2006). We have organized the Dagstuhl Seminar 19331.

Prof. Koen De Bosschere, Universiteit Ghent - Department of Computer Science, cv-Ghent, Belgio (in 2005-2006). Relevant publications [48].

Review Activities for International Projects

(2020) Reviewer of four projects for the Young Academics research proposal at the University of Luxembourg's Institute of Advanced Studies, for the selection on interdisciplinary PhD candidates (August 2020)

(2019) Reviewer of a project for the Austrian Science Fund (FWF) entiteled "Inference of Optimal Cyber Defense Strategies" (May 2019)

(2016) Reviewer of the research project for the Internal Research Projects Call 2016 for the l'University of Luxembourg (UL) entitled "HitDroid: Hinting at Malicious Code in Android Apps Identifying Malicious Payloads in Malware at Market Scale with Graph and Data Clustering Techniques" (June 2016)

Commissions of trust

(October/November 2022) Member of the commission for one position of Associate Professor in Computer Science at the University of Southern Denmark (SDU), Danmark.

(May/June 2022) Member of the commission for one position of Assistant Professor in Computer Science, Dipartimento di Informatica, Sapienza, Roma, Italy.

(Luglio 2020) Member of the commission for the selection of the PhD student in computer science at the Dipartimento di Informatica - University of Verona (2020).

Program Committees for International Conferences

(TACAS 2024) International Conference on Tools and Algorithms for the Construction and Analysis of Systems.
(DPM 2023) Workshop on Data Privacy Management DPM @ ESORICS 2023.
(POPL 2023, 2018, 2017) ACM SIGPLAN Symposium on Principles of Programming Languages.
(ITASEC 2023, 2022) Italian Conference on Cybersecurity .
(FPS 2013-2016, 2019 - 2021) International Symposium on Foundations & Practice of Security .
(FORTE 2019) International Conference on Formal Techniques for Distributed Objects, Components, and Systems.
(CRISIS 2020) International Conference on Risks and Security of Internet and Systems.
(APLAS 2020) Asian Symposium on Principles of Programming Languages and Systems.
(CC 2020) International Conference on Compiler Construction.

(SPRO 2015, 2016, 2019) IEEE International Workshop on Software PROtection.

(ForSE 2017 - 2019) International Workshop on FORmal methods for Security Engineering.

(SECURWARE 2017, 2018) International Conference on Emerging Security Information, Systems and Technologies.

(NSAD 2016) Numerical and Symbolic Abstract Domain Workshop, .

(CGO 2016) IEEE/ACM International Symposium on Code Generation and Optimization.

(PLDI 2015) ACM SIGPLAN conference on Programming Language Design and Implementation.

(SOFSEM 2014, 2015) International conference on Current Trends in Theory and Practice of Computer Science - Cryptography, Security & Verification track.

(SAS 2013) Static Analysis Symposium.

(MALWARE 2012, 2012) IEEE international conference MALWARE.

Reviewer for International Journal

(2023) Journal of Software: Evolution and Process - John Wiley and Sons Ltd.

(2018 –2022) Journal of Computer Virology and Hacking Techniques - Springer.

(2021) Information Science - Elsevier.

(2020, 2022) IEEE Transactions of Software Engineering.

(2020) IEEE Transactions on Dependable and Secure Computing.

(2019) Journal of Computer Security - IOS Press.

(2019, 2016, 2011) Journal of Systems and Software - Elsevier.

(2019, 2017, 2015, 2011) Journal of Information Security - Springer.

(2017) Recent Patents on Engineering - Benthamscinece.

(2015) International Journal of Computers in Healthcare (IJCIH) - InderScience.

(2015) Discrete and Applied Mathematics - Elsevier.

(2011) Higher-Order and Symbolic Computation - Springer.

(2010) IEEE Software Journal.

Teaching

(2020 – now) Professor of *Compilers*, undergraduate major in Computer Science of the University of Verona.

(2016 - now) Professor of *Software Security* graduate program in Computer Science of the University of Verona.

(2021 - now) *Foundations of programming and specification languages* graduate program in Computer Science of the University of Verona.

(2020 - now) Professor of the module of Security in the course *Data Security & Privacy* graduate program in Data Science of the University of Verona.

(2016 - 2020) Professor of the module of Computer Science in the course *Behavioural Sciences and Scientific Methodology* graduate program in Dentistry and Dental Prosthetics of the University of Verona.

(2016 - 2020) Professors of *Basic Information Technology* undergraduate major in Communication Studies of the University of Verona.

(2014 - 2016) Professor of *Static analysis and code protection* graduate program in Computer Science of the University of Verona.

List of Publications

Journals

[1] M. Pasqua, A. Benini, F. Contro, M. Crosara, M. Dalla Preda, M. Ceccato. Enhancing Ethereum Smart-Contracts Static Analysis by Computing a Precise Control-Flow Graph of Ethereum Bytecode. *To appear in The Journal of Systems & Software*, Elsevier. DOI.

[2] F. Abazari, E. Branca, N. Ridley, N. Stakhanova, M. Dalla Preda. Dataset characteristics for reliable code authorship attribution. *IEEE Transactions on Dependable and Secure Computing* 20(1): 506-521, 2023. ISSN 1545-5971. DOI.

[3] M. Campion, M. Dalla Preda, and R. Giacobazzi. Partial (In)Completeness in Abstract Interpretation. The 49th ACM SIGPLAN Symposium on Principles of Programming Languages (POPL 2022), *PACMPL (POPL)* 6, POPL, Article 59 (January 2022), 31 pages. 2022.ISSN 2475-1421. DOI.

[4] M. Campion, M. Dalla Preda, and R. Giacobazzi. Learning Metamorphic Malware Signatures from Samples. *Journal of Computer Virology and Hacking Techniques*. February 2021. ISSN 2263-8733. DOI.

[5] N. Marastoni, R. Giacobazzi, and M. Dalla Preda. Data Augmentation and Transfer Learning to Classify Malware Images in a Deep Learning Context. *Journal of Computer Virology and Hacking Techniques*. April 2021. ISSN 2263-8733. DOI.

[6] M. Dalla Preda and M. Pasqua. Semantics-based Software Watermarking by Abstract Interpretation. *Mathematical Structures in Computer Science* 29(2), pages 339-388, 2019. ISSN 09601295. DOI.

[7] M. Dalla Preda e I. Mastroeni. Characterizing a Property Driven Obfuscation Strategy. *Journal of Computer Security* 26(1), pages 31-69, 2018. ISSN 0926-227X DOI.

[8] M. Dalla Preda, M. Gabbrielli, S. Giallorenzo, I. Lanese, J. Mauro. Dynamic Choreographies: from theory to practice. *Logical Methods in Computer Science* 13(2) 2017. ISSN 1860-5974. DOI.

[9] M. Dalla Preda e F. Maggi. Testing Android Malware Detectors Against Code Obfuscation: A Systematization of Knowledge and Unified Methodology. *Journal of Computer Virology and Hacking Techniques* 13(3) pages 209 - 232, 2017. ISSN 2274-2042. DOI.

[10] R. Giacobazzi, I. Mastroeni, and M. Dalla Preda. Maximal incompleteness as obfuscation potency. *Formal Aspects of Computing* 29(1):3-31, Springer Verlag, 2017. ISSN: 0934-5043. DOI.

[11] M. Dalla Preda, M. Gabbrielli, S. Giallorenzo, I. Lanese e J. Mauro. Developing correct, distributed, adaptive software. *Science of Computer Programming (SCP)* vol. 97, pages 41-46, 2015. ISSN: 0167-6423. DOI.

[12] M. Dalla Preda, R. Giacobazzi, and S. Debray. Unveiling Metamorphism by Abstract Interpretation of Code Properties. *Theoretical Computer Science*. Volume 577(27):74-97 2015. DOI.

[13] M. Dalla Preda and R. Giacobazzi. Semantic-based Code Obfuscation by Abstract Interpretation. *Journal of Computer Security*, 17(6):855-908, 2009. DOI.

[14] M. Ceccato, M. Dalla Preda, J. Nagra, C. Collberg e P. Tonella. Trading off security and performance in barrier slicing for remote software trusting. *Special Issue of Journal of Automated Software Engineering* 16(2), pages 235-261, 2009. ISSN: 0928-8910. DOI.

[15] M. Dalla Preda, M. Christodorescu, S. Jha e S. Debray. A Semantics-based approach to Malware Detection. *ACM Transactions on Programming Languages and Systems (TOPLAS)* 30(5), pages 1-54. 2008. ISSN: 0164-0925. DOI.

International Conferences

[16] M. Campion, M. Dalla Preda, R. Giacobazzi. On the Properties of Partial Completeness in Abstract Interpretation. *23rd Italian Conference on Theoretical Computer Science ICTCS 2022*, pages 79-85. DOI.

[17] F. Contro, M. Crosara, M. Ceccato, M. Dalla Preda. EtherSolve: Computing an Accurate Control-Flow Graph from Ethereum Bytecode. *29th IEEE/ACM International Conference on Program Comprehension ICPC* 2021, pages 127-137. DOI.

[18] M. Dalla Preda, R. Giacobazzi, and N. Marastoni. Formal Framework for Reasoning About the Precision of Dynamic Analysis. *The 27th Static Analysis Symposium (SAS2020)*. Lecture Notes in Computer Science, vol 12389, pages 178-199. 2020. DOI.

[19] M. Dalla Preda. Towards a unifying framework for tuning analysis precision by program transformation. *Recent Developments in the Design and Implementation of Programming Languages, Gabbrielli's Festschrift* 2020. OASIcs 86, Schloss Dagstuhl - Leibniz-Zentrum für Informatik 2020, pages 4:1 - 4:22. ISBN 978-3-95977-171-9

[20] M. Pasetto, N. Marastoni e M. Dalla Preda Revealing Similarities in Android Malware by Dissecting their Methods. *Workshop on Software Attacks and Defenses SAD@Euro S&P* 2020, pages 625-634. DOI.

[21] M. Campion, M. Dalla Preda, and R. Giacobazzi. Abstract Interpretation of Indexed Grammars. *The 26th Static Analysis Symposium (SAS2019)*. Lecture Notes in Computer Science, vol 11822, pages 121–139. Springer 2019. DOI.

[22] A. Matyukhina, N. Stakhanova, M. Dalla Preda, C. Perley. Adversarial author attribution on open-source projects. *9th ACM Conference on Data Application Security and Privacy*, CODASPY 2019, pages 291-302. DOI.

[23] N. Marastoni, R. Giacobazzi, and M. Dalla Preda. A Deep Learning Approach to Program Similarity. *The 1st International Workshop on Machine Learning and Software Engineering in Symbiosis* 2018. pages 26-35. ACM Press. DOI.

[24] N. Marastoni, A. Continella, D. Quarta, S. Zanero, M. Dalla Preda. GroupDroid: Automatically classifying mobile malware by extracting code similarity. *7th ACM Workshop on Software Security, Protection and Reverse Engineering* SSPREW@ACSAC 2017, pages 1:1 - 1:12. DOI.

[25] M. Dalla Preda e M. Pasqua. Software watermarking: a semantics based approach. *6th Numerical and Symbolic Abstract Domain Workshop* NSAD 2016. ENTCS volume 331, pp 71 - 85, 2016. DOI.

[26] M. Dalla Preda e V. Vidali. Abstract similarity analysis. *6th Numerical and Symbolic Abstract Domain Workshop* NSAD 2016. ENTCS volume 331, pp 87-99, 2016. DOI.

[27] R. Sartea, M. Dalla Preda, A. Farinelli, R. Giacobazzi, and I. Mastroeni. Active Android malware analysis: an approach based on stochastic games. *6th ACM Workshop on Software Security, Protection and Reverse Engineering* SSPREW @ ACSAC 2016: 5:1-5:10. 2016. DOI.

[28] C. Zheng, M. Dalla Preda, J. Granula, S. Zanero e F. Maggi. On-chip system call tracing: feasibility study and open prototype for Linux/ARM. *IEEE Conference on Communication and Network System* CNS 2016, pages 73 - 81. DOI.

[29] M. Dalla Preda, R. Giacobazzi, and I. Mastroeni. Completeness in Approximate Transduction. *The 23th International Static Analysis Symposium SAS'16*, Lecture Notes in Computer Science, pages 129-145, Springer Verlag. September 2016, Edinburgh, UK. DOI.

[30] M. Dalla Preda, M. Gabbrielli, S. Giallorenzo, I. Lanese e J. Mauro. Dynamic Choreographies Safe Runtime Updates of Distributed Applications. *17th IFIP International Conference on Coordination Models and Languages* COORDINATION 2015, Volume 9037 of Lecture Notes in Computer Science, pagine 67-82. DOI.

[31] M. Dalla Preda e I. Mastroeni. Infections as Abstract Symbolic Finite Automata: Formal Model and Applications. *1st IEEE International Workshop on Software PRO-tection* (SPRO) 2015, pagine 59-65. DOI.

[32] M. Dalla Preda, R. Giacobazzi, A. Lakhotia, and I. Mastroeni. Abstract Symbolic Automata. *42th Annual ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL'15)*, pages 329–341, ACM 2015. DOI.

[33] M. Dalla Preda, S. Giallorenzo, I. Lanese, J. Mauro e M. Gabbrielli. AIOCJ: A Choreography Framework for SafeAdaptive Distributed Applications. *7th International Conference on Software Language Engineering* (SLE'14). DOI.

[34] M. Dalla Preda, I. Mastroeni, and R Giacobazzi. Analyzing program dependencies for malware detection. *3rd ACM SIGPLAN Program Protection and Reverse Engineering Workshop 2014, PPREW* 2014, pages 6:1–6:7, ACM. DOI.

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