Currículum Vítae: Ricardo J. Rodríguez

Personal information

Surname/Name: Rodríguez Fernández, Ricardo J.
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E-mail: rjrodriguez@unizar.es
Date of birth: 16/07/1985 (Barcelona) **Citizenship:** Spanish
Gender: Male
WWW: http://webdiis.unizar.es/~ricardo
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Researcher ID: L-8958-2014

Work Experience

University of Zaragoza, Dpto. de Informática e Ingeniería de Sistemas

Dates	**April 2021 — (onward)**
Position	**Associate Professor**
	Teaching and research duties regarding Computer Science subjects.
	Research topics: program binary analysis, digital forensics, survivability analysis.
Address	C/ María de Luna, 50018 Zaragoza
Sector	University

University of Zaragoza, Dpto. de Informática e Ingeniería de Sistemas

Dates	**September 2019 — April 2021**
Position	**Assistant Professor**
	Teaching and research duties regarding Computer Science subjects.
	Research topics: performance of complex software systems, modelling and analysis of security in critical infrastructures, and program binary analysis.
Address	C/ María de Luna, 50018 Zaragoza
Sector	University

Centro Universitario de la Defensa, Academia General Militar

Dates	**February 2017 — September 2019**
Position	**Assistant Professor**
	Teaching and research duties regarding Computer Science subjects. Course related to programming principles (Grado en Ingeniería de Organización Industrial)
Address	Carr. de Huesca, s/n, 50090 Zaragoza
Sector	University

University of Zaragoza, Dpto. de Informática e Ingeniería de Sistemas

Dates	**October 2015 — February 2017**
Position	**Assistant Professor**
	Teaching and research duties regarding Computer Science subjects. Research topics: performance of complex software systems, modelling and analysis of security in critical infrastructures, and program binary analysis.
Address	C/ María de Luna, 50018 Zaragoza
Sector	University

Research Institute of Applied Sciences in Cybersecurity, University of León

Dates	**July 2014 — October 2015**
Position	**Senior Researcher**
	Senior researcher in the areas of critical systems design and analysis, software security, and performance analysis and optimization of large complex secure systems.
Address	Avenida de la Facultad 25, 24004 León (Spain)
Sector	University

Technical University of Madrid, School of Computer Science

Dates	**March 2013 — June 2014**
Position	**Researcher**
	Researcher staff associated to "Safety Certification of Software-intensive Systems with Re-usable Components", `nSafeCer` project (ARTEMIS Joint Undertaking project, Grant Agreement n. 295373).
Address	Montegancedo Campus, 28660 Boadilla del Monte, Madrid
Sector	University

University of Zaragoza, Dpto. de Informática e Ingeniería de Sistemas

Dates	**July 2009 — March 2013**
Position	**Researcher staff of Dpto. de Informática e Ingeniería de Sistemas** Research scholarship granted by Group of Discrete Event Systems Engineering (main responsable D. Manuel Silva), accredited as Research Group of Excellence by the Aragonese Government (Ref. T27). Research topics: performance of complex software systems, software engineering and security.
Address	C/ María de Luna, 50018 Zaragoza
Sector	University

Centro de Recursos Ocupacionales 2020

Dates	**March 2009**
Position	**Teacher** Subject: *Oriented-Object Programming in Java*.
Address	C/ Zumalacárregui 10, Zaragoza
Sector	Academy

Instituto Tecnológico de Aragón

Dates	**June 2008 — June 2009**
Position	**Researcher staff (postgraduate scholarship)** Topics: developing in embedded systems and RTOS based on Linux in specific hardware platforms (C, C++); software and Web developing with .NET technologies (ASP, C#); deployment of e-administration systems (SIGEM, W@nda)
Address	C/ María de Luna, 50018 Zaragoza
Sector	R&D center

Academia AGORA

Dates	**January 2006 — December 2009 (not continuated)**
Position	**Teacher (subjects related to System Computer Technical Engineering)** Subjects: *Programming*, *Data Structures* y *State Machines*.
Address	Avnda Madrid 67, Zaragoza
Sector	Academy

Centro de Docencia Alimentaria

Dates	**January 2006 — (until the present) (not continuated)**
Position	**Teacher** Subject: *The Internet and Windows Basic*.
Address	Mercazaragoza, Carretera de Cogullada 65, Zaragoza
Sector	Academy

RRHH Consulting

Dates	**May 2007 — November 2007**
Position	**Teacher**
	Subject: *Microsoft Office Suite*.
Address	C/ Parque 11, Zaragoza
Sector	Academy

Invited Lecturer

University of León

Dates	**Spring semester (from course 2016/2017 to 2023/2024)**
Position	**Invited Lecturer**
	Invited lecturer in the Master's degree in Research in Cybersecurity.
	Course: *Software Analysis I* (mandatory course, 6 ECTS).
Address	Campus de Vegazana S/N, 24071 León (Spain)
Sector	University

University of León

Dates	**Fall semester (from course 2016/2017 to 2023/2024)**
Position	**Invited Lecturer**
	Invited lecturer in the Master's degree in Research in Cybersecurity.
	Course: *Software Analysis II* (elective course, 6 ECTS).
Address	Campus de Vegazana S/N, 24071 León (Spain)
Sector	University

Dipartimento di Matematica e Fisica, Università dell Campania "Luigi Vanvitelli"

Dates	**September 1 – December 01, 2022 (three months in total)**
Position	**Visiting Professor**
	Invited Professor in the Department of Mathematics and Physics, Università dell Campania "Luigi Vanvitelli".
Address	Viale Lincoln, 5 – 81100 Caserta (Italy)
Sector	University

Dipartimento di Matematica e Fisica, Università dell Campania "Luigi Vanvitelli"

Dates	**June 1 – October 30, 2018 (three months in total)**
Position	**Visiting Professor**
	Invited Professor in the Department of Mathematics and Physics, Università dell Campania "Luigi Vanvitelli".
Address	Viale Lincoln, 5 – 81100 Caserta (Italy)
Sector	University

Dipartimento di Matematica e Fisica, Seconda Università degli Studi di Napoli

Dates	**June 20 – July 17, 2016; August 29 – October 31, 2016**
Position	**Visiting Professor** Invited Professor in the Department of Mathematics and Physics, Second University of Naples.
Address	Viale Lincoln, 5 – 81100 Caserta (Italy)
Sector	University

University of León

Dates	**June 2016**
Position	**Invited Lecturer** Invited teacher in the Master on Security Technologies. Seminar of 20 hours of duration entitled *Reverse Software Engineering and Malware Analysis*.
Address	Campus de Vegazana S/N, 24071 León (Spain)
Sector	University

University of León

Dates	**July 2015**
Position	**Invited Lecturer** Invited teacher in the Master on Security Technologies. Seminar of 20 hours of duration entitled *Reverse Software Engineering and Malware Analysis*.
Address	Campus de Vegazana S/N, 24071 León (Spain)
Sector	University

Mälardalen University, School of Innovation, Design and Engineering

Dates	**March 12th – 14th, 2014**
Position	**Invited Lecturer** Invited lecturer during the research visit. Conducted a Ph.D. level advanced course titled *A Crash Course in Petri Nets and Performance Analysis* (2 ECTS awarded), and attended by over 20 participants.
Address	Box 883, 721 23 Västerås (Sweden)
Sector	University

University of León

Dates	**February 2014**
Position	**Invited Lecturer** Invited teacher in the Master on Security Technologies. Seminar of 20 hours of duration entitled *Reverse Software Engineering and Malware Analysis*.
Address	Campus de Vegazana S/N, 24071 León (Spain)
Sector	University

University of Zaragoza, Dpto. de Informática e Ingeniería de Sistemas

Dates	**December 2012**
Position	**Invited Lecturer**
	Invited teacher in the Master on System and Computer Engineering.
	Seminar of 2 hours of duration entitled *Reverse Software Engineering: Applications and Research Lines* in the *Secure Applications Design* subject.
Address	C/ María de Luna, 50018 Zaragoza
Sector	University

University of Zaragoza, Dpto. de Informática e Ingeniería de Sistemas

Dates	**January 2012**
Position	**Invited Lecturer**
	Invited teacher in the Master on System and Computer Engineering.
	Seminar of 2 hours of duration entitled *Reverse Software Engineering: an Introduction* in the *Secure Applications Design* subject.
Address	C/ María de Luna, 50018 Zaragoza
Sector	University

Research Internships

Technische Universität Ilmenau, FG System- und Software-Engineering

Dates	**March 1, 2023 — March 30, 2023**
Position	**Associate visiting research**
	Under supervision of Prof. Dr.-Ing. Armin Zimmermann.
	Research topics: optimization techniques in Petri nets.
Address	Ehrenbergstraße 29, 98693 Ilmenau (Germany)
Sector	University

Technische Universität Ilmenau, FG System- und Software-Engineering

Dates	**September 11, 2017 — December 10, 2017**
Position	**Associate visiting research**
	Under supervision of Prof. Dr.-Ing. Armin Zimmermann.
	Research topics: rare-event simulation.
Address	Ehrenbergstraße 29, 98693 Ilmenau (Germany)
Sector	University

Research Institute of Applied Sciences in Cybersecurity, University of León

Dates	**February 2017**
Position	**Associate visiting research** Under supervision of Prof. Miguel Carriegos. Research topics: analysis-aware malware and algebraic methods to optimize the network protection.
Address	Campus de Vegazana S/N, 24071 León (Spain)
Sector	University

Mälardalen University, School of Innovation, Design and Engineering

Dates	**January 13th, 2014 — March 14th, 2014**
Position	**Associate visiting research** Under supervision of Prof. Sasikumar Punnekkat. Research topics: safety certification and optimisation in Software Product Line Engineering (SPLE).
Address	Box 883, 721 23 Västerås (Sweden)
Sector	University

Cardiff University, School of Computer Science & Informatics

Dates	**May 2012 — July 2012**
Position	**Associate visiting research** Under supervision of Prof. Omer F. Rana. Research topics: performance on scientific workflows, malware analysis.
Address	5 The Parade, Cardiff, CF24 3AA (Wales - United Kingdom)
Sector	University

Cardiff University, School of Computer Science & Informatics

Dates	**July 2011 — September 2011**
Position	**Associate visiting research** Under supervision of Prof. Omer F. Rana. Research topics: performance of scientific workflows, security by client-side perspective and security in Business Process Modelling (BPM).
Address	5 The Parade, Cardiff, CF24 3AA (Wales - United Kingdom)
Sector	University

Education and Training

Ph.D. by University of Zaragoza

DATES	**September 2010 — June 2013**
	Official Postgrade Program in Computer Engineering: PhD by University of Zaragoza. PhD program with Quality Mention (reference MCD2003-00466) by Spanish Minister of Education and Science.
	PhD. student associated with Group of Discrete Event Systems Engineering in Departamento de Informática e Ingeniería de Sistemas.
	PhD advisors: Jorge Júlvez y José Merseguer.
	PhD Thesis: *"Performance Analysis and Resource Optimisation of Critical Systems Modelled by Petri Nets"*. Grade: **Summa Cum Laude**
CENTER	Escuela de Ingeniería y Arquitectura (EINA (former CPS), University of Zaragoza)

Master on System and Computer Engineering

DATES	**September 2008 — February 2010**
	Some subjects passed: *Distributed Computing*, *Network Computers*, *High Performance Programming*, *Petri Networks Modelling*, *Secure Applications Design*.
	Master thesis title: *"Modelling and Analysing Security Aspects within UML"*
CENTER	Centro Politécnico Superior (CPS, University of Zaragoza)

Computer Engineering (5-year degree)

DATES	**September 2003 — September 2008**
	Some subjects passed: *Computer Architecture*, *Internal Structure of Operating Systems*, *Data Structures and Algorithms*, *I/O Subsystems and peripheral devices*, *Embedded Systems*, *Real-Time Systems*, *Advanced Programming*, *Concurrent Programming*, *Parallel Programming*, *Parallelism on Processors*, *Artificial Intelligence*, *Software Engineering*, *Project Management*.
	Honor Degree in *Software Engineering*.
	Final degree project title: "Adding a module supporting RT-WMP (Real Time-Wireless Multihop Protocol) protocol to Linux 2.6 kernel"
CENTER	Centro Politécnico Superior (CPS, University of Zaragoza)

Research activity

Publications

María Emilia Cambronero, Miguel A. Martínez, Luis Llana, **Ricardo J. Rodríguez** and Alejandro Russo (2024). **Towards a GDPR-compliant cloud architecture with data privacy controlled through sticky policies**. *PeerJ Computer Science* vol. 10, no. e1898, pp. 1–44 JCR ranked in Q2 (subject category *Computer Science, Information Systems*, 77/158), impact factor 3.8 (2022), PeerJ Inc. doi: 10.7717/peerj-cs.1898

Javier Carrillo-Mondéjar, Guillermo Suárez-Tangil, Andrei Costin, and **Ricardo J. Rodríguez** (2024). **Exploring Shifting Patterns in Recent IoT Malware**. In *Proceedings of the 23rd Eu-*

ropean Conference on Cyber Warfare and Security (ECCWS), vol. PP, pp. PP, ACI. Accepted for publication. To appear.

Pedro Fernández-Álvarez and **Ricardo J. Rodríguez** (2023). **Module Extraction and DLL Hijacking Detection via Single or Multiple Memory Dumps**. *Forensic Science International: Digital Investigation*, vol. 44, pp. 301505, JCR ranked in Q4 (subject category *Computer Science, Information Systems*, 122/158), impact factor 2.0 (2022), Elsevier. doi: 10.1016/j.fsidi.2023.301505

Ricardo J. Rodríguez, Stefano Marrone, Ibai Marcos, and Giuseppe Porzio (2023). **MOSTO: A Toolkit to Facilitate Security Auditing of ICS Devices using Modbus/TCP**. *Computers & Security*, vol. 132, pp. 103373, JCR ranked in Q2 (subject category *Computer Science, Information Systems*, 41/158), impact factor 5.6 (2022), Elsevier. doi: 10.1016/j.cose.2023.103373

Jing Bai, Xiaolin Chang, **Ricardo J. Rodríguez**, Kishor Trivedi, and Shupan Li (2023). **Towards UAV-based MEC Service Chain Resilience Evaluation: A Quantitative Modeling Approach**. *IEEE Transactions on Vehicular Technology*, vol. 72, no. 4, pp. 5181–5194, JCR ranked in Q1 (subject category *Telecommunications*, 14/88), impact factor 6.8 (2022), IEEE. doi: 10.1109/TVT.2022.3225564

Razvan Raducu, **Ricardo J. Rodríguez**, Pedro Álvarez (2022). **Resource Consumption Evaluation of C++ Cryptographic Libraries on Resource-Constrained Devices**. In *Proceedings of the 2nd EAI International Conference on Cryptography in Computer and Communications* (AC3 2022), pp. 65–75, Springer, 2022. doi: 10.1007/978-3-031-17081-2_53

Jianhua Wang, Xiaolin Chang, **Ricardo J. Rodríguez**, and Yixiang Wang (2022). **Assessing Anonymous and Selfish Free-rider Attacks in Federated Learning**. In *Proceedings of the 2022 IEEE Symposium on Computers and Communications*, ranked as conference type B, class 3 (GGS 2021), pp. 6, IEEE. doi: 10.1109/ISCC55528.2022.9912903

Yixiang Wang, Jiqiang Liu, Xiaolin Chang, **Ricardo J. Rodríguez** and Jianhua Wang (2022). **DI-AA: An Interpretable White-box Attack for Fooling Deep Neural Networks**. *Information Sciences*, vol. 610, pp. 14–32. JCR ranked in Q1 (subject category *Computer Science, Information Systems*, 13/158), impact factor 8.1 (2022), Elsevier. doi: 10.1016/j.ins.2022.07.157

Yixiang Wang, Jiqiang Liu, Xiaolin Chang, Jianhua Wang, and **Ricardo J. Rodríguez** (2022). **AB-FGSM: AdaBelief Optimizer and FGSM-Based Approach to Generate Adversarial Examples**. *Journal of Information Security and Applications*, vol. 68, pp. 103227. JCR ranked in Q2 (subject category *Computer Science, Information Systems*, 41/158), impact factor 5.6 (2022), Elsevier. doi: 10.1016/j.jisa.2022.103227

Roberto Blanco and **Ricardo J. Rodríguez** (2022). **OCamello: A Course and Summer School with Learn-OCaml**. In *OCaml Users and Developers Workshop 2022*. doi:

Esteban Damián Gutiérrez Mlot, Jose Saldana, and **Ricardo J. Rodríguez** (2022). **Towards a Testbed for Critical Industrial Systems: SunSpec Protocol on DER Systems as a Case Study**. In *Proceedings of the 27th International Conference on Emerging Technologies and Factory Automation* (ETFA), ranked as conference type B, class 3 (GGS 2021), pp. 1–4, IEEE. doi: 10.1109/ETFA52439.2022.9921522

Ailton Santos Filho, **Ricardo J. Rodríguez**, and Eduardo L. Feitosa (2022). **Evasion and Countermeasures Techniques to Detect Dynamic Binary Instrumentation Frameworks**. *Digital Threats: Research and Practice*, vol. 3, iss. 2, pp. 28, SCImago journal ranked in Q2 (subject category *Information Systems*, 160/376), SJR value 0.54 (2022), ACM. doi: 10.1145/3480463

Daniel Uroz and **Ricardo J. Rodríguez** (2022). **Characterization and Evaluation of IoT Protocols for Data Exfiltration**. *IEEE Internet of Things Journal*, vol. 9, iss. 19, pp. 19062–19072, JCR ranked in Q1 (subject category *Computer Science, Information Systems*, 4/158), impact factor 10.6 (2022), IEEE. doi: 10.1109/JIOT.2022.3163469

Razvan Raducu, **Ricardo J. Rodríguez**, and Pedro Alvarez (2022). **Defense and Attack Techniques against File-based TOCTOU Vulnerabilities: a Systematic Review**. In *IEEE Access*, vol. 10, pp. 21742–21758, JCR ranked in Q2 (subject category *Computer Science, Information Systems*, 65/161), impact factor 3.367 (2020), IEEE. doi: 10.1109/ACCESS.2022.3153064

Ailton Santos Filho, **Ricardo J. Rodríguez**, and Eduardo L. Feitosa (2022). **Evasion and Countermeasures Techniques to Detect Dynamic Binary Instrumentation Frameworks**. In *Digital Threats: Research and Practice*, vol. 3, iss. 2, pp. 28, ACM. doi: 10.1145/3480463

Pedro Fernández-Álvarez and **Ricardo J. Rodríguez** (2022). **Extraction and Analysis of Retrievable Memory Artifacts from Windows Telegram Desktop Application**. In *Forensic Science International: Digital Investigation*, vol. 40, pp. 301342, JCR ranked in Q3 (subject category *Computer Science, Information Systems*, 104/162), impact factor 2.192 (2020), Elsevier. doi: 10.1016/j.fsidi.2022.301342.

Miguel Martín-Pérez and **Ricardo J. Rodríguez** (2021). **Quantifying Paging on Recoverable Data from Windows User-Space Modules**. In *Proceedings of the 12th EAI International Conference on Digital Forensics & Cyber Crime (EAI ICDFC2)*, Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering, vol. 441, pp. 1–19, Springer. doi: https://doi.org/10.1007/978-3-031-06365-7_1

Daniel Uroz and **Ricardo J. Rodríguez** (2021). **Evaluation of the Executional Power in Windows using Return Oriented Programming**. In *Proceedings of the 15th IEEE Workshop on Offensive Technologies (WOOT)*, pp. 361–372, IEEE. doi: 10.1109/SPW53761.2021.00056

Miguel Martín-Pérez, **Ricardo J. Rodríguez**, and Frank Breitinger (2021). **Bringing Order to Approximate Matching: Classification and Attacks on Similarity Digest Algorithms**. In *Forensic Science International: Digital Investigation*, vol. 36, pp. 301120, JCR ranked in Q3 (subject category *Computer Science, Information Systems*, 104/162), impact factor 2.192 (2020), Elsevier. doi: 10.1016/j.fsidi.2021.301120.

Miguel Martín-Pérez, **Ricardo J. Rodríguez**, and Davide Balzarotti (2021). **Pre-processing Memory Dumps to Improve Similarity Score of Windows Modules**. In *Computers & Security*, vol. 101, pp. 102119, JCR ranked in Q1 (subject category *Computer Science, Information Systems*, 40/162), impact factor 4.438 (2020), Elsevier. doi: 10.1016/j.cose.2020.102119.

Jianhua Wang, Xiaolin Chang, Yixiang Wang, **Ricardo J. Rodríguez**, and Jianan Zhang (2021). **LSGAN-AT: Enhancing Malware Detector Robustness against Adversarial Examples**. In *Cybersecurity*, vol. 4:38, iss. 1, pp. 15, SCImago journal ranked in Q2 (subject category *Information Systems*), SJR value 0.37 (2020), ACM. doi: 10.1186/s42400-021-00102-9

José Selvi, **Ricardo J. Rodríguez**, and Emilio Soria-Olivas (2021). **Towards Optimal LSTM Neural Networks for Detecting Algorithmically Generated Domain Names**. In *IEEE Access*, vol. 9, pp. 126446–126456, JCR ranked in Q2 (subject category *Computer Science, Information Systems*, 65/162), impact factor 3.367 (2020), IEEE. doi: 10.1109/ACCESS.2021.3111307

Miguel Hernández-Bejarano, **Ricardo J. Rodríguez**, and José Merseguer (2021). **A Vision for Improving Business Continuity through Cyber-resilience Mechanisms and Frameworks**.

In *Proceedings of the 16th Iberian Conference on Information Systems and Technologies* (CISTI), pp. 1–5, IEEE. doi: 10.23919/CISTI52073.2021.9476324

Ricardo J. Rodríguez, Simona Bernardi, and Armin Zimmermann (2020). **An Evaluation Framework for Comparative Analysis of Generalized Stochastic Petri Net Simulation Techniques**. In *IEEE Transactions on Systems, Man and Cybernetics: Systems* vol. 50, no. 8, pp. 2834–2844, JCR ranked in Q1 (subject category *Computer Science, Cybernetics*, 1/23), impact factor 13.451 (2020), IEEE. doi: 10.1109/TSMC.2018.2837643

Daniel Uroz and **Ricardo J. Rodríguez** (2020). **On Challenges in Verifying Trusted Executable Files in Memory Forensics**. In *Forensic Science International: Digital Investigation*, vol. 32, pp. 300917, JCR ranked in Q3 (subject category *Computer Science, Information Systems*, 104/162), impact factor 2.192 (2020), Elsevier. doi: 10.1016/j.fsidi.2020.300917.

Álvaro Botas, **Ricardo J. Rodríguez**, Vicente Matellán, and Juan Felipe García, M. T Trobajo and Miguel V. Carriegos (2020). **On Fingerprinting of Public Malware Analysis Services**. In *Logic Journal of the IGPL*, vol. 28, no. 4, pp.473–486, JCR ranked in Q1 (subject category *Logic*, 2/21), impact factor 0.861 (2020), Oxford University Press. doi: 10.1093/jigpal/jzz050

Ailton Santos Filho, **Ricardo J. Rodríguez**, and Eduardo L. Feitosa (2020). **Reducing the Attack Surface of Dynamic Binary Instrumentation Frameworks**. In *Proceedings of the 2019 Multidisciplinary International Conference of Research Applied to Defense and Security*, Smart Innovation, Systems and Technologies series, vol. 152, pp. 3–13, Springer. doi: 10.1007/978-981-13-9155-2_1

Daniel Uroz and **Ricardo J. Rodríguez** (2019). **Characteristics and Detectability of Windows Auto-Start Extensibility Points in Memory Forensics**. In *Digital Investigation*, vol. 28S, pp. S95–S104, JCR ranked in Q3 (subject category *Computer Science, Information Systems*, 108/156), impact factor 1.736 (2019), Elsevier. doi: 10.1016/j.diin.2019.01.026

José Selvi, **Ricardo J. Rodríguez**, and Emilio Soria-Olivas (2019). **Detection of Algorithmically Generated Malicious Domain Names using Masked N-Grams**. In *Expert Systems with Applications*, vol. 124, pp. 156–163, JCR ranked in Q1 (subject category *Computer Science, Artifical Intelligence*, 21/136), impact factor 5.452 (2019), Elsevier. doi: 10.1016/j.eswa.2019.01.050

Yu Shi, Xiaolin Chang, **Ricardo J. Rodríguez**, Zhenjiang Zhang, and Kishor S. Trivedi (2019). **Quantitative security analysis of a dynamic network system under lateral movement-based attacks**. In *Reliability Engineering & System Safety*, vol. 183, pp. 213–225, JCR ranked in Q1 (subject category *Engineering, Industrial*, 6/48), impact factor 5.040 (2019), Elsevier. doi: 10.1016/j.ress.2018.11.022

Ricardo J. Rodríguez, Rafael Tolosana-Calasanz, and Omer F. Rana (2019). **A Dynamic Data-Throttling Approach to Minimize Workflow Imbalance**. In *ACM Transactions on Internet Technology* vol. 19(3), pp. 1–21, JCR ranked in Q2 (subject category *Computer Science, Software Engineering*, 54/108), impact factor 1.598 (2019), ACM. doi: 10.1145/3278720

Ricardo J. Rodríguez and Javier Campos (2019). **On Throughput Approximation of Resource Allocation Systems by Bottleneck Regrowing**. In *IEEE Transactions on Control Systems Technology*, vol. 27, no. 1, pp. 370–377, JCR ranked in Q1 (subject category *Automation & Control Systems*, 10/63), impact factor 5.312 (2019), IEEE. doi: 10.1109/TCST.2017.2768512

Abel Gómez, **Ricardo J. Rodríguez**, María-Emilia Cambronero, and Valentín Valero (2019). **Profiling the Publish/Subscribe Paradigm for Automated Analysis Using Colored Petri**

Nets. In *Software and Systems Modeling*, vol. 18(5), pp. 2973–3003, JCR ranked in Q2 (subject category *Computer Science, Software Engineering*, 45/108), impact factor 1.876 (2019), Springer. doi: 10.1007/s10270-019-00716-1

Xiaolin Chang, Shaohua Lv, **Ricardo J. Rodríguez**, and Kishor Trivedi (2018). **Survivability Model for Security and Dependability Analysis of a Vulnerable Critical System**. In *Proceedings of the 2018 27th International Conference on Computer Communication and Networks*, ranked as conference type A-, class 2 (GGS 2018), pp. 1–6. doi: 10.1109/ICCCN.2018.8487446

Elena Gómez-Martínez, **Ricardo J. Rodríguez**, Clara Benac Earle, Leire Etxeberria Elorza, and Miren Illarramendi Rezabal (2018). **A Methodology for Model-based Verification of Safety Contracts and Performance Requirements**. In *Proceedings of the Institution of Mechanical Engineers Part O – Journal of Risk and Reliability* vol. 232, no.3, pp. 227–247, JCR ranked in Q3 (subject category *Engineering, Multidisciplinary*, 51/88), impact factor 1.313 (2018), SAGE Publications. doi: 10.1177/1748006X16667328

Ricardo J. Rodríguez, Miguel Martín-Pérez, and Iñaki Abadía (2018). **A Tool to Compute Approximation Matching between Windows Processes**. In *Proceedings of the 2018 6th International Symposium on Digital Forensic and Security (ISDFS)*, pp. 1–6, IEEE. doi: 10.1109/ISDFS.2018.8355372

Xiaolin Chang, Tianju Wang, **Ricardo J. Rodríguez**, and Zhenjiang Zhang (2018). **Modeling and Analysis of High Availability Techniques in a Virtualized System**. In *The Computer Journal*, vol. 61:2, pp. 180–198, JCR ranked in Q4 (subject category *Computer Science, Software Engineering*, 69/104), impact factor 0.980 (2018), Oxford University Press. doi: 10.1093/comjnl/bxx049

Bo Liu, Xiaolin Chang, Zhen Han, Kishor Trivedi and **Ricardo J. Rodríguez** (2018). **Model-based Sensitivity Analysis of IaaS Cloud Availability**. In *Future Generation Computer Systems*, vol. 83, pp. 1–13, JCR ranked in Q1 (subject category *Computer Science, Theory & methods*, 8/104), impact factor 5.768 (2018), Elsevier. doi: 10.1016/j.future.2017.12.062

Armin Zimmermann, Andrés Canabal Lavista, and **Ricardo J. Rodríguez** (2017). **Some Notes on Rare-Event Simulation Challenges: Fast Abstract**. In *Proceedings of 11th EAI International Conference on Performance Evaluation Methodologies and Tools* (VALUETOOLS 2017), ACM, 2017. doi: 10.1145/3150928.3150963

Ricardo J. Rodríguez and Juan Carlos Garcia-Escartin (2017). **Security Assessment of the Spanish Contactless Identity Card**. In *IET Information Security*, vol. 11(7), pp. 386–393, JCR ranked in Q3 (subject category *Computer Science, Theory & methods*, 69/103), impact factor 0.890 (2017), Institution of Engineering and Technology. doi: 10.1049/iet-ifs.2017.0299

Álvaro Botas, **Ricardo J. Rodríguez**, Vicente Matellán, and Juan Felipe García (2017). **Empirical Study to Fingerprint Public Malware Analysis Services**. In *Proceedings of the International Joint Conference SOCO'17-CISIS'17-ICEUTE'17*, Advances in Intelligent Systems and Computing, vol. 649, pp. 589-599, Springer. doi: 10.1007/978-3-319-67180-2_57

Ricardo J. Rodríguez (2017). **Evolution and Characterization of Point-of-Sale RAM Scraping Malware**. In *Journal in Computer Virology and Hacking Techniques*, vol. 13, iss. 3, pp. 179–192, SCImago journal ranked in Q2 (subject category *Computer Science (miscellaneous)*), SJR value 0.27 (2017), Springer. doi: 10.1007/s11416-016-0280-4

Ricardo J. Rodríguez (2017). **A Petri Net Tool for Software Performance Estimation Based**

on Upper Throughput Bounds. In *Automated Software Engineering*, vol. 24, pp. 73–99, JCR ranked in Q2 (subject category *Computer Science, Software Engineering*, 32/104), impact factor 1.806 (2017), Springer. doi: 10.1007/s10515-015-0186-2

Roberto Nardone, **Ricardo J. Rodríguez**, and Stefano Marrone (2016). **Formal Security Assessment of Modbus Protocol**. In *Proceedings of the 11th International Conference for Internet Technology and Secured Transactions*, pp. 142–147, IEEE. doi: 10.1109/ICITST.2016.7856685

L. García and **Ricardo J. Rodríguez**. **A Peek Under the Hood of iOS Malware** (2016). In *Proceedings of the 1st International Workshop on Malware Analysis*, pp. 590–598, IEEE. doi: 10.1109/ARES.2016.15

Ricardo J. Rodríguez, Xiaolin Chang, Xiaodan Li and Kishor S. Trivedi (2016). **Survivability Analysis of a Computer System under an Advanced Persistent Threat Attack**. In *Proceedings of the 3rd International Workshop on Graphical Models for Security (GraMSec)*, Lecture Notes in Computer Science vol. 9987, pp. 134–149, Springer. doi: 10.1007/978-3-319-46263-9_9

Ricardo J. Rodríguez, Iñaki Rodríguez-Gastón, and Javier Alonso (2016). **Towards the Detection of Isolation-Aware Malware**, In *IEEE Latin America Transactions*, vol. 14:2, pp. 1024–1036, JCR ranked in Q4 (subject category *Computer Science, Information Systems*, 135/146), impact factor 0.631 (2016), IEEE. doi: 10.1109/TLA.2016.7437254

Ricardo J. Rodríguez (2016). **On Qualitative Analysis of Fault Trees Using Structurally Persistent Nets**. In *IEEE Transactions on Systems, Man and Cybernetics: Systems* vol. 46:2, pp. 282–293, JCR ranked in Q2 (subject category *Computer Science, Cybernetics*, 7/22), impact factor 2.350 (2016), IEEE. doi: 10.1109/TSMC.2015.2437360

Ricardo J. Rodríguez and Stefano Marrone (2016). **Model-Based Vulnerability Assessment of Self-Adaptive Protection Systems**. In *Proceedings of the 2nd Workshop on Cyber Security and Resilience of Large-Scale Systems (WSRL)*, Studies in Computational Intelligence vol. 616, pp. 439–449, Springer. doi: 10.1007/978-3-319-25017-5_41

Ricardo J. Rodríguez, José Merseguer, and Simona Bernardi (2015). **Modelling Security of Critical Infrastructures: A Survivability Assessment**. In *The Computer Journal*, vol. 58:10, pp. 2313–2327, JCR ranked in Q2 (subject category *Computer Science, Software Engineering*, 53/106), impact factor 1.000 (2015), Oxford University Press. doi: 10.1093/comjnl/bxu096

Álvaro Botas, **Ricardo J. Rodríguez**, Teemu Vaisanen, and Patrycjusz Zdzichowski (2015). **Counterfeiting and Defending the Digital Forensic Process**. In *Proceedings of the 2015 IEEE International Conference on Computer and Information Technology; Ubiquitous Computing and Communications; Dependable, Autonomic and Secure Computing; Pervasive Intelligence and Computing (CIT/IUCC/DASC/PICOM)*, pp. 1966–1971, IEEE. doi: 10.1109/CIT/IUCC/DASC/PICOM.2015.291.

Stefano Marrone, **Ricardo J. Rodríguez**, Roberto Nardone, Francesco Flammini, and Valeria Vittorini (2015). **On Synergies of Cyber and Physical Security Modelling in Vulnerability Assessment of Railway Systems**. In *Computers and Electrical Engineering*, vol. 47, pp. 275–285, JCR ranked in Q2 (subject category *Computer Science, Hardware & Architecture*, 24/51), impact factor 1.084 (2015), Elsevier. doi: 10.1016/j.compeleceng.2015.07.011

José Vila, and **Ricardo J. Rodríguez** (2015). **Practical Experiences on NFC Relay Attacks with Android: Virtual Pickpocketing Revisited**. In *Proceedings of the 11th Workshop on RFID Security (RFIDSec)*, ranked as conference type C (CORE 2014, category *Computer Software*), Lecture Notes in Computer Science vol. 9440, pp. 87–103, Springer. Acceptance rate: 39.13%

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Elena Gómez-Martínez, **Ricardo J. Rodríguez**, Leire Etxeberria Elorza, Miren Illarramendi Rezabal, and Clara Benac Earle (2015). **Model-based Verification of Safety Contracts**. In *SaFoMe'14: Proceedings of the 1st International Workshop on Safety and Formal Methods (SEFM workshop)*, Lecture Notes in Computer Science vol. 8938, pp. 101–115, Springer. Acceptance rate: 55.56%. doi: 10.1007/978-3-319-15201-1_7

Ricardo J. Rodríguez, Juan A. Artal and José Merseguer (2014). **Performance Evaluation of Dynamic Binary Instrumentation Frameworks**, In *IEEE Latin America Transactions*, vol. 12:8, pp. 1572–1580, JCR ranked in Q4 (subject category *Computer Science, Information Systems*, 131/139), impact factor 0.326 (2014), IEEE. doi: 10.1109/TLA.2014.7014530

Ricardo J. Rodríguez, and Sasikumar Punnekkat (2014). **Cost Optimisation in Certification of Software Product Lines**. In *Proceedings of the 4th IEEE International Workshop on Software Certification (WoSoCer) – IEEE International Symposium on Software Reliability Engineering Workshops (ISSREW)*, pp. 509–514, IEEE. doi: 10.1109/ISSREW.2014.103

Ricardo J. Rodríguez, Lars-Åke Fredlund, Ángel Herranz, and Julio Mariño (2014). **Execution and Verification of UML Diagrams with Erlang**. In *SEFM'14: Proceedings of the 12th International Conference on Software Engineering and Formal Methods*, ranked as conference type B (CORE 2013, category *Computer Software*), Lecture Notes in Computer Science vol. 8702, pp. 284–289, Springer. Acceptance rate: 27%. doi: 10.1007/978-3-319-10431-7_22

Ricardo J. Rodríguez, and Elena Gómez-Martínez (2014). **Model-Based Safety Assessment using OCL and Petri nets**. In *SEAA 2014: Proceedings of the 40th Euromicro Conference on Software Engineering and Advanced Applications – Embedded Software Engineering track*, ranked as conference type C (CORE 2013, category *Computer Software*), pp. 56 – 59, IEEE. Acceptance rate: 31%. doi: 10.1109/SEAA.2014.36

Ricardo J. Rodríguez, Lars-Åke Fredlund, and Ángel Herranz (2013). **From UML State-Machine Diagrams to Erlang**. In *PROLE 2013: Proceedings of the XIII Jornadas sobre Programación y Lenguajes*, 288–299.

Ricardo J. Rodríguez, Jorge Júlvez, and José Merseguer (2013). **Quantification and Compensation of the Impact of Faults in System Throughput**. In *Proceedings of the Institution of Mechanical Engineers Part O – Journal of Risk and Reliability* vol. 227:6, pp. 614–628, JCR ranked in Q3 (subject category *Engineering, Multidisciplinary*, 50/87), impact factor 0.775 (2013), SAGE Publications. doi: 10.1177/1748006X13492284

Ricardo J. Rodríguez, Jorge Júlvez, and José Merseguer (2013). **On the Performance Estimation and Resource Optimisation in Process Petri Nets**. In *IEEE Transactions on Systems, Man and Cybernetics: Systems* vol. 43:6, pp. 1385–1398, JCR ranked in Q1 (subject category *Computer Science, Cybernetics*, 4/24), impact factor 2.169 (2013), IEEE. doi: 10.1109/TSMC.2013.2245118

Ricardo J. Rodríguez, Catia Trubiani, and José Merseguer (2012). **Fault-Tolerant Techniques and Security Mechanisms for Model-based Performance Prediction of Critical Systems**. In *ISARCS'12: Proceedings of the 3rd International Symposium on Architecting Critical Systems*, pp. 21–30, ACM. Acceptance rate: 38.89%.doi: 10.1145/2304656.2304660

Ricardo J. Rodríguez, Jorge Júlvez, and José Merseguer (2012). **PeabraiN: A PIPE Extension for Performance Estimation and Resource Optimisation**. In *ACSD'12: Proceedings of the 12th International Conference on Application of Concurrency to System Designs*, ranked as conference

type B (CORE 2013, category *Distributed Computing*), pp. 142–147, IEEE. Acceptance rate: 41.66%. doi: 10.1109/ACSD.2012.13

Ricardo J. Rodríguez, Rafael Tolosana-Calasanz and Omer F. Rana (2012). **Measuring the Effectiveness of Thottled Data Transfers on Data-Intensive Workflows**. In *KES AMSTA'12: Proceedings of the 6th International KES Conference on Agents and Multi-agent Systems – Technologies and Applications*, ranked as conference type C (CORE 2013, category *Artificial Intelligence and Image Processing*), Lecture Notes in Computer Science vol. 7327, pp. 144–153, Springer. doi: 10.1007/978-3-642-30947-2_18

Ricardo J. Rodríguez, Rafael Tolosana-Calasanz, and Omer F. Rana (2012). **Automating Data-Throttling Analysis for Data-Intensive Workflows**. In *CCGrid'12: Proceedings of the 12th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing*, ranked as conference type A (CORE 2013, category *Distributed Computing*), pp. 310–317, IEEE. Acceptance rate: 27.50%. doi: 10.1109/CCGrid.2012.27

Ricardo J. Rodríguez, and Jorge Júlvez (2010). **Accurate Performance Estimation for Stochastic Marked Graphs by Bottleneck Regrowing**. In *EPEW'10: Proceedings of the 7th European Performance Engineering Workshop*, Lecture Notes in Computer Science vol. 6342, pp. 175–190, Springer. Acceptance rate: 42.10%. doi: 10.1007/978-3-642-15784-4_12

Ricardo J. Rodríguez, and José Merseguer (2010). **Integrating Fault-Tolerant Techniques into the Design of Critical Systems**. In *ISARCS'10: Proceedings of the 1st International Symposium on Architecting Critical Systems*, Lecture Notes in Computer Science vol. 6150, pp. 33–51, Springer. Acceptance rate: 40.70%. doi: 10.1007/978-3-642-13556-9_3

Ricardo J. Rodríguez, José Merseguer, and Simona Bernardi (2010). **Modelling and Analysing Resilience as a Security Issue within UML**. In *SERENE'10: Proceedings of the 2nd International Workshop on Software Engineering for Resilient Systems*, pages 42–51, ACM. Acceptance rate: 68.75%. doi: 10.1145/2401736.2401741

Presentations on Conferences and Seminars

Evolution and Characterization of Point-of-Sale RAM Scraping Malware, Obra social "la Caixa" Gran Hotel, Palma de Mallorca (Spain), May 20, 2016.

A Journey through iOS Malware Landscape: Evolution & Characterization, Kinépolis, Madrid (Spain), March 4, 2016.

Qualitative and Quantitative Evaluation of Software Packers, Ramon Llul University (La Salle Campus), Barcelona (Spain), December 12, 2015.

Reverse Engineering Crash Course, Ramon Llul University (La Salle Campus), Barcelona (Spain), December 10, 2015. **Seminar** of 8 hours.

On Qualitative Analysis of Fault Trees Using Structurally Persistent Nets, Edificio Ada Byron, University of Málaga, Málaga (Spain), June 10, 2015.

Relay Attacks in EMV Contactless Cards with Android OTS Devices, De Beurs, Amsterdam (Netherlands), May 28, 2015.

On Dynamic Search of Software Vulnerabilities, Centre de Cultura SA NOSTRA, Palma de Mallorca (Spain), May 23, 2015.

On Relaying NFC Payment Transactions using Android devices, Centro de Congresos Príncipe

Felipe, Hotel Auditorium, Madrid (Spain), March 6, 2015.

Cost Optimisation in Certification of Software Product Lines, Royal Continental Hotel, Naples (Italy), November 4, 2014.

Model-based Verification of Safety Contracts, Ensimag building, Grenoble (France), September 1, 2014.

Model-Based Safety Assessment using OCL and Petri nets, University of Verona, Verona (Italy), August 27, 2014.

One FlAw over the Cuckoo's Nest, CosmoCaixa, Barcelona (Spain), November 1, 2013.

Ingeniería Inversa en Sistemas Windows, CosmoCaixa, Barcelona (Spain), October 30, 2013. **Seminar** of 8 hours.

Reverse Code Engineering Course: Theory & Practice, Instituto Nacional de Tecnologías de la Comunicación (INTECO), León (Spain), September 23 – 26, 2013. **Seminar** of 20 hours.

From UML State-Machine Diagrams to Erlang, Facultad de Informática, Universidad Complutense de Madrid, Madrid (Spain), September 20, 2013.

DBI for Computer Security: Uses and Comparative, New York Hotel, Chessy (France), June 21, 2013.

Reverse Engineering in Win32 Apps: How to Protect Yourself in-the-wild, New York Hotel, Chessy (France), June 19, 2013. **Seminar** of 8 hours.

Ingeniería Inversa en Aplicaciones de Win32 bits, Academia Alfonso XII (RootedLAB 2013), Madrid (Spain), March 4, 2013. **Seminar** of 8 hours.

Frameworks DBI para Seguridad Informática: usos y comparativa, CosmoCaixa, Barcelona (Spain), November 3, 2012.

The `PeabraiN` **tool** (Tool Exhibition session), University of Hamburg, Hamburg (Germany), June 28, 2012.

`PeabraiN`: **A PIPE Extension for Performance Estimation and Resource Optimisation**, University of Hamburg, Hamburg (Germany), June 28, 2012.

`PeabraiN`: **A PIPE Extension for Performance Estimation and Resource Optimisation**, Hotel Puerta del Camino, Pamplona (Spain), June 13, 2012.

Automating Data-Throttling Analysis for Data-Intensive Workflows, Delta Ottawa City Centre Hotel, Ottawa (Canada), May 15, 2012.

`PeabraiN`**: a PIPE extension for Performance Estimation, Resource Optimisation and Simulation Analysis**, Seminar A.23 – Ed. Ada Byron, Universidad de Zaragoza, Zaragoza (Spain), April 27, 2012.

Mejora en el Proceso de Desempacado usando Técnicas DBI, Auditorio de la Fundación Mútua Madrileña de Madrid, Madrid (Spain), March 3, 2012.

On the Secure Software Development in Early Stages within UML Profiles, Alvisse Parc Hotel, Luxembourg-Dommeldange (Luxembourg), September 19, 2011.

Seguridad en el diseño: desde el principio, CosmoCaixa, Barcelona (Spain), September 16, 2011.

Ingeniería Inversa en Aplicaciones de Win32 bits, CosmoCaixa, Barcelona (Spain), September 15, 2011. **Seminar** of 8 hours.

Accurate Performance Estimation for Stochastic Marked Graphs by Bottleneck Regrowing, La Granja de San Ildefonso, Segovia (Spain), June 8, 2011.

Accurate Performance Estimation for Stochastic Marked Graphs by Bottleneck Regrowing, University Residential Center of Bertinoro, Bertinoro (Italy), September 24, 2010.

Integrating Fault-Tolerant Techniques into the Design of Critical Systems, Charles University, Prague (Czech Republic), June 23, 2010.

Modelling and Analysing Resilience as a Security Issue within UML, Birbeck College, London (United Kingdom), April 15, 2010.

Invited Presentations on Conferences or Seminars

Ataques a sistemas de pago: pasado, presente y…¿futuro?, Kinépolis, Madrid (Spain), December 11, 2015.

Buffer Overflows: What They Are and How to Avoid Them, in Mundo Hacker Day 2015, Kinépolis, Madrid (Spain), April 28, 2015.

Ataques de relay en tarjetas EMV NFC con dispositivos Android, Ilustre Colegio Oficial de Médicos de Madrid, Madrid (Spain), December 10, 2014.

Modelling and Analysis of Non-Functional Properties in Critical Systems with Petri Nets, II PROMETIDOS Winter School, IMDEA, Madrid (Spain), December 16, 2013.

Protección de Ejecución de Código Arbitrario en Windows: ¿estamos realmente protegidos?, Auditorio de la Fábrica Nacional de Moneda y Timbre (FNMT), Madrid (Spain), December 10, 2013.

Buffer overflows: qué son y cómo evitarlos, BetaBeers, Zaragoza (Spain), November 29, 2013.

Hacking the NFC cards for fun and honor degrees, Universidad de Zaragoza, Zaragoza (Spain), November 15, 2013.

Persistencia APT: Técnicas Empleadas, Auditorio de la Fábrica Nacional de Moneda y Timbre (FNMT), Madrid (Spain), December 11, 2012.

Avoiding to be infected by malware. We are not alone…: watch your back!, Cardiff University, Cardiff (United Kingdom), June 3, 2012.

El Arte de la Ingeniería Inversa, Hackmeeting, Zaragoza (Spain), October 23, 2010.

Research Technical Reports

Ricardo J. Rodríguez, José Merseguer, and Simona Bernardi (2010). **"Modelado y Análisis de Aspectos de Seguridad con UML"**.

Professional Activities

Member of the board of IEEE Computer Society - Spanish chapter, December 2018 – 2022

Member of *IEEE-IES Technical Committee on Factory Automation, Subcommittee on Fault Tolerant and Dependable Systems*, May 2017 – (onward)

Secretary of the "Sociedad Científica de Computación Distribuida", June 2017 – Septiembre 2021

Member of *Aragon Institute for Engineering Research*, 2016 – (onward).

***IEEE Computer Society* member**, 2013 – 2022. No. #91236646.

IEEE Cybersecurity Community member.

Member of *IEEE Computer Society Technical Committee on Security and Privacy*, 2013 – 2022.

Member of *IEEE Computer Society Technical Committee on Dependable Computing and Fault Tolerance*, 2013 – 2022.

Founding partner and member of **Sociedad científica para la Computación Concurrente y Distribuida** (SCCD), 2011 – (until the present).

PhD. member of Babel Group, Universidad Politécnica de Madrid, 2014 – 2015.

PhD. student member of Group of Discrete Event Systems Engineering (Grupo de Ingeniería de Sistemas de Eventos Discretos, GISED), 2010 – 2013.

Reviewer of:

Journals:

Proceedings of the Institution of Mechanical Engineers, Part I: Journal of Systems and Control Engineering (JSCE).

Proceedings of the Institution of Mechanical Engineers, Part O: Journal of Risk and Reliability (JRR).

IEEE Transactions on Systems, Man, and Cybernetics, Part A: Systems and Humans (SMC-A).

Journal of Systems and Software (JSS).

Automation of Software Engineering (AUSE).

Computers & Electrical Engineering (CEE).

Discrete Event Dynamic Systems (DEDS).

IEEE Transactions on Information Forensics & Security (TIFS).

IEEE Transactions on Computers (IEEE TC).

Computer Communications (COMCOM).

IEEE Transactions on Control Systems Technology (TCST).

IEEE Latin American Transactions (IEEE LATAM).

The Computer Journal (COMPUT J).

Reliability Engineering and System Safety (RESS).

Concurrency and Computation: Practice & Experience (CPE).

IEEE Transactions on Parallel and Distributed Systems (TPDS).

Robotics and Autonomous Systems (RAS).

Journal of the Chinese Institute of Engineering (JCIE).

Conferences:

Int. Conf. Series on the Quality of Software Architectures (QoSA), 2010 – 2012.

Int. Conf. on Software Engineering Advances (ICSEA), 2010.

European Performance Engineering Workshop (EPEW), 2010.

Int. Conf. on Performance Engineering (ICPE), 2011.

Int. Conf. on Cloud Computing and Services Science (CLOSER), 2011, 2012 .

Int. Conf. on Application of Concurrency to System Design (ACSD), 2011, 2012.

Int. Conf. on Emerging Technologies and Factory Automation (ETFA), 2011.

Int. Conf. on Cloud Computing, GRIDs, and Virtualization (CLOUD COMPUTING), 2011, 2012.

Int. Conf. on Cloud and Green Computing (CGC), 2011.

Jornadas sobre Programación y Lenguajes (PROLE), 2013.

Int. Conf. on Information Assurance and Security (IAS), 2013.

Int. Conf. on Quantitative Evaluation of Systems (QEST), 2014, 2016.

Int. Conf. on Integrated Formal Methods (iFM), 2014.

International Workshop on Safety and Formal Methods (SaFoMe), 2014.

Doctoral Workshop on Mathematical and Engineering Methods in Computer Sc. (MEMICS), 2014.

Int. Symposium on Software Reliability Engineering (Student Track) (ISSRE-ST), 2014.

4th International Workshop on Engineering Safety and Security Systems (ESSS), 2015.

12th Int. Conference on Economics of Grids, Clouds, Systems, and Services (GECON), 2015.

I Jornadas Nacionales de Ciberseguridad (JNIC), 2015.

European Conference on Cyber Warfare and Security (ECCWS), 2016–2018.

IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2017.

III Jornadas Nacionales de Ciberseguridad (JNIC), 2017.

9th ACM/SPEC International Conference on Performance Engineering (ICPE), 2018.

IV Jornadas Nacionales de Ciberseguridad (JNIC), 2018.

24th IEEE International Conference on Emerging Technologies and Factory Automation (ETFA), 2019.

V Jornadas Nacionales de Ciberseguridad (JNIC), 2019.

15th IEEE International Workshop on Factory Communication Systems (WFCS), 2019.

25th IEEE International Conference on Emerging Technologies and Factory Automation (ETFA), 2020.

16th IEEE International Workshop on Factory Communication Systems (WFCS), 2020.

15th Iberian Conference on Information Systems and Technologies (CISTI), 2020.

2020 Multidisciplinary International Conference of Research Applied to Defense and Security (MICRADS), 2020.

14th International Conference on Verification and Evaluation of Computer and Communication Systems (VECoS), 2020.

15th International Conference for Internet Technology and Secured Transactions (ICITST), 2020.

26th IEEE International Conference on Emerging Technologies and Factory Automation (ETFA), 2021.

17th IEEE International Workshop on Factory Communication Systems (WFCS), 2021.

16th Iberian Conference on Information Systems and Technologies (CISTI), 2021.

15th International Conference on Verification and Evaluation of Computer and Communication Systems (VECoS), 2021.

VI Jornadas Nacionales de Ciberseguridad (JNIC), 2021.

11th IEEE International Workshop on Software Certification (WoSoCer), 2021.

8th Annual Digital Forensics Research Conference Europe (DFRWS EU), 2021.

IX Congreso Nacional de I+D en Defensa y Seguridad (DESEi+d), 2022.

27th IEEE International Conference on Emerging Technologies and Factory Automation (ETFA), 2022.

18th IEEE International Workshop on Factory Communication Systems (WFCS), 2022.

13th IEEE International Symposium on Parallel Architectures (PAAP), 2022.

16th International Conference on Verification and Evaluation of Computer and Communication Systems (VECoS), 2022.

VII Jornadas Nacionales de Ciberseguridad (JNIC), 2022.

12th IEEE International Workshop on Software Certification (WoSoCer), 2022.

9th Annual Digital Forensics Research Conference Europe (DFRWS EU), 2022.

28th IEEE International Conference on Emerging Technologies and Factory Automation (ETFA), 2023.

19th IEEE International Workshop on Factory Communication Systems (WFCS), 2023.

14th IEEE International Symposium on Parallel Architectures (PAAP), 2023.

17th International Conference on Verification and Evaluation of Computer and Communication Systems (VECoS), 2023.

VIII Jornadas Nacionales de Ciberseguridad (JNIC), 2023.

10th Annual Digital Forensics Research Conference Europe (DFRWS EU), 2023.

29th IEEE International Conference on Emerging Technologies and Factory Automation (ETFA), 2024.

11th Annual Digital Forensics Research Conference Europe (DFRWS EU), 2024.

IX Jornadas Nacionales de Ciberseguridad (JNIC), 2024.

Program Committee member of:

1st Int. Workshop on Safety and Formal Methods (SaFoMe), 2014 (also Organizer Committee member).

9th Doctoral Workshop on Mathematical and Engineering Methods in Computer Sc. (MEMICS), 2014.

4th International Workshop on Engineering Safety and Security Systems (ESSS), 2015.

15th European Conference on Cyber Warfare and Security (ECCWS), 2016.

XXIV Jornadas de Concurrencia y Sistemas Distribuidos (JCSD 2016).

International Conference for Internet Technology and Secured Transactions (ICITST), 2016–2017.

11th International Conference on Emerging Security Information, Systems and Technologies (SECURWARE), 2017.

Jornadas Nacionales de Ciberseguridad (JNIC), 2015, 2017–2018.

Workshop on Safety & Security aSSurance for Critical Infrastructures Protection (S4CIP), 2016–2018 (also Programme Chair).

IV Jornadas Nacionales de Ciberseguridad (JNIC), 2018.

24th IEEE International Conference on Emerging Technologies and Factory Automation (ETFA), 2019.

V Jornadas Nacionales de Ciberseguridad (JNIC), 2019.

15th IEEE International Workshop on Factory Communication Systems (WFCS), 2019.

25th IEEE International Conference on Emerging Technologies and Factory Automation (ETFA), 2020.

16th IEEE International Workshop on Factory Communication Systems (WFCS), 2020.

15th Iberian Conference on Information Systems and Technologies (CISTI), 2020.

2020 Multidisciplinary International Conference of Research Applied to Defense and Security (MICRADS), 2020.

14th International Conference on Verification and Evaluation of Computer and Communication Systems (VECoS), 2020.

15th International Conference for Internet Technology and Secured Transactions (ICITST), 2020.

26th IEEE International Conference on Emerging Technologies and Factory Automation (ETFA), 2021.

17th IEEE International Workshop on Factory Communication Systems (WFCS), 2021.

16th Iberian Conference on Information Systems and Technologies (CISTI), 2021.

15th International Conference on Verification and Evaluation of Computer and Communication Systems (VECoS), 2021.

VI Jornadas Nacionales de Ciberseguridad (JNIC), 2021.

11th IEEE International Workshop on Software Certification (WoSoCer), 2021.

8th Annual Digital Forensics Research Conference Europe (DFRWS EU), 2021.

IX Congreso Nacional de I+D en Defensa y Seguridad (DESEi+d), 2022.

27th IEEE International Conference on Emerging Technologies and Factory Automation (ETFA), 2022.

18th IEEE International Workshop on Factory Communication Systems (WFCS), 2022.

13th IEEE International Symposium on Parallel Architectures (PAAP), 2022.

16th International Conference on Verification and Evaluation of Computer and Communication Systems (VECoS), 2022.

VII Jornadas Nacionales de Ciberseguridad (JNIC), 2022.

12th IEEE International Workshop on Software Certification (WoSoCer), 2022.

9th Annual Digital Forensics Research Conference Europe (DFRWS EU), 2022.

28th IEEE International Conference on Emerging Technologies and Factory Automation (ETFA), 2023.

19th IEEE International Workshop on Factory Communication Systems (WFCS), 2023.

14th IEEE International Symposium on Parallel Architectures (PAAP), 2023.

17th International Conference on Verification and Evaluation of Computer and Communication Systems (VECoS), 2023.

VIII Jornadas Nacionales de Ciberseguridad (JNIC), 2023.

10th Annual Digital Forensics Research Conference Europe (DFRWS EU), 2023.

29th IEEE International Conference on Emerging Technologies and Factory Automation (ETFA), 2024.

11th Annual Digital Forensics Research Conference Europe (DFRWS EU), 2024.

IX Jornadas Nacionales de Ciberseguridad (JNIC), 2024.

Guest Editor of:

Special Issue on Methods and Tools for Assurance of Critical Infrastructure Protection, International Journal of Critical Computer-Based Systems, vol. 9, no. 1/2, 2019. Inderscience, ISSN 1757-8787.

Special Issue on Challenges and Trends in Malware Analysis, Digital Threats: Research and Practice, 2022. Association for Computing Machinery, ISSN 2692-1626.

Publication Chair of:

13th Conference on Detection of Intrusions and Malware & Vulnerability Assessment (DIMVA), 2016.

Selected Papers of the 10th Annual Digital Forensics Research Conference Europe, Forensic Science: Digital Investigation, vol. 44 (supplement), pp. 301525, ISSN 2666-2817.

Assistance at Conferences and Workshops

7th International Conference on Ambient Systems, Networks and Technologies (ANT), Madrid (Spain), June 23 – 26, 2016.

XXIII Jornadas de Concurrencia y Sistemas Distribuidos (JCSD), Málaga (Spain), June 10 – 12, 2015.

25th IEEE International Symposium on Software Reliability Engineering (ISSRE), November 3 – 6, 2014.

4th IEEE International Workshop on Software Certification (WoSoCer), November 3, 2014.

1st International Workshop on Safety and Formal Methods (SEFM workshop) (SaFoMe), September 1, 2014.

40th Euromicro Conference on Software Engineering and Advanced Applications (SEAA), Verona (Italy), August 27 – 29, 2014.

XXII Jornadas de Concurrencia y Sistemas Distribuidos (JCSD), Morella (Castellón, Spain), June 11 – 13, 2014.

XIII Jornadas sobre Programación y Lenguajes (PROLE), Madrid (Spain), September 17 – 20, 2013.

3rd Edition of the Simgrid Users Days (SUD), Saint-Germain-au-Mont-d'Or (France), June 5 – 8, 2013.

12th International Conference on Application of Concurrency to System Designs (ACSD), Hamburg (Germany), June 27 – 29, 2012.

International Workshop on Petri Net-based Security (WooPS), Hamburg (Germany), June 26th, 2012.

3rd International Workshop on Biological Processes & Petri Nets (BioPPN), Hamburg (Germany), June 25, 2012.

XX Jornadas de Concurrencia y Sistemas Distribuidos (JCSD), Pamplona (Spain), June 13 – 15, 2012.

12th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid), Delta Ottawa City Centre Hotel, Ottawa (Canada), May 13 –16, 2012.

XIX Jornadas de Concurrencia y Sistemas Distribuidos (JCSD), La Granja de San Ildefonso, Segovia (Spain), June 8 – 10, 2011.

Seventh European Performance Engineering Workshop (EPEW), University Residential Center of Bertinoro, Bertinoro (Italy), September 23 – 24, 2010.

First International Symposium on Architecting Critical Systems (ISARCS), Charles University, Prague (Czech Republic), June 23 – 25, 2010.

Second International Workshop on Software Engineering for Resilient Systems (SERENE), Birkbeck College, London (United Kingdom), April 15 – 16, 2010.

Assistance at Seminars, Events and Research Courses

III Congreso Nacional de Malware (MalCON 2016), Palma de Mallorca (Spain), May 20 – 21, 2016. Organizer: *Asociación MLW.RE*.

RootedCON 2016, Kinépolis, Madrid (Spain), March 3 – 5, 2016. Organizer: *Asociación Rooted CON*.

XII Congreso de Seguridad Informática, Ramon Llul University (La Salle Campus), Barcelona

(Spain), December 11 – 12, 2015. Organizer: *Asociación No cON Name*.

IX Jornadas STIC CCN-CERT: Detección e Intercambio, factores clave, Kinépolis, Madrid (Spain), December 10 – 11, 2015. Organizer: *Centro Criptológico Nacional (CCN-CERT)*.

Hack in the Box Security Conference (HITBSecConf), Amsterdam (Netherlands), May 28 – 29, 2015.

II Congreso Nacional de Malware (MalCON 2015), Palma de Mallorca (Spain), May 22 – 23, 2015. Organizer: *Asociación MLW.RE*.

RootedCON 2015, Centro de Congresos Príncipe Felipe, Hotel Auditorioum, Madrid (Spain), March 5 – 7, 2015. Organizer: *Asociación Rooted CON*.

VIII Jornadas STIC CCN-CERT: La defensa del patrimonio tecnológico frente a los ciberataques, Ilustre Colegio Oficial de Médicos de Madrid, Madrid (Spain), December 10 – 11, 2014. Organizer: *Centro Criptológico Nacional (CCN-CERT)*.

Summer School on Computer Security and Privacy "Building Trust in the Information Age", University of Cagliari, Cagliari (Italy), September 16 – 19, 2014. Organizers: *Giorgio Giacinto, Davide Ariu, Igino Corona, Dept. of Electrical and Electronic Engineering, University of Cagliari, Italy*.

Summer School "La ciberseguridad y la protección de la información", Universidad Internacional Menéndez Pelayo, Santander (Spain), July 7 – 10, 2014. Organizer: *Instituto Español de Estudios Estratégicos*.

I Congreso Nacional de Malware (MalCON 2014), Palma de Mallorca (Spain), May 23 – 24, 2014. Organizer: *Asociación MLW.RE*.

VII Jornadas STIC CCN-CERT: La ciberseguridad, un factor estratégico nacional, Auditorio de la Fábrica Nacional de Moneda y Timbre (FNMT), Madrid (Spain), December 10 – 11, 2013. Organizer: *Centro Criptológico Nacional (CCN-CERT)*.

X Congreso de Seguridad Informática, CosmoCaixa, Barcelona (Spain), November 1 – 2, 2013. Organizer: *Asociación No cON Name*.

Hack In Paris 2013, New York Hotel, Chessy (France), June 20 – 21, 2013. Organizer: *Sysdreams IT Security Services*.

RootedCON 2013, Auditorio de la Fundación Mútua Madrileña de Madrid, Madrid (Spain), March 7 – 9, 2013. Organizer: *Asociación Rooted CON*.

VI Jornadas STIC CCN-CERT: La gestión de la ciberseguridad en las Administraciones Públicas, Auditorio de la Fábrica Nacional de Moneda y Timbre (FNMT), Madrid (Spain), December 11 – 12, 2012. Organizer *Centro Criptológico Nacional (CCN-CERT)*.

IX Congreso de Seguridad Informática, CosmoCaixa, Barcelona (Spain), November 2 – 3, 2012. Organizer: *Asociación No cON Name*.

Ethical Hacking and Cyber Security, Cardiff (United Kingdom), June 3rd, 2012.

RootedCON 2012, Auditorio de la Fundación Mútua Madrileña de Madrid, Madrid (Spain), March 1 – 3, 2012. Organizer: *Asociación Rooted CON*.

7th edition of Hack.lu, Alvisse Parc Hotel, Luxembourg-Dommeldange (Luxembourg), September 19 – 21, 2011. Organizer: *Computer Incident Response Center Luxembourg* (CIRCL).

IIX Congreso de Seguridad Informática, CosmoCaixa, Barcelona (Spain), September 16 – 17, 2011. Organizer: *Asociación No cON Name*.

Goza!Hack, Zaragoza (Spain), September 21 – 24, 2010. Organizer: *Hackmeeting*.

Software Engineering for Resilient Systems Spring School, Birkbeck College, London (United Kingdom), April 13 – 14, 2010 (16 hours).
Focussed in engineering aspects about systems resilience and sef-adaptative systems. Invited speakers: Paola Inverardi (*University of L'Aquila, Italia*), Jeff Magee (*Imperial College London, UK*), Aad van Moorsel (*University of Newcastle, UK*) and Mauro Pezzè (*University of Lugano, Suiza*, and *University of Milano Bicocca, Italia*).

Asegúr@IT V, Instituto Tecnológico de Aragón, March 3rd 2009 (5 hours). Organizer(s): *Informática64*, *Microsoft TechNet*, *ITA*, *ATCA*, *Quest Software*. Invited speakers: David Carrasco (*Microsoft TechNet*), Alejandro Martín (*Informática64*), Carles Martín (*Quest Software*), Pedro Sánchez (*ATCA*) y José Parada (*Microsoft*).

Seminarios de Líneas de Investigación, several speakers during September 2008 and June 2009. Researchers of specific domains come to show their research lines, achieved goals and outgoing work.

III Jornadas de Comercio Electrónico y Tendencias Tecnológicas, Zaragoza, 2008. Organizer: *Cátedra Telefónica Universidad de Zaragoza*.

Jornadas NEOCom 2007, Zaragoza, 2007. Organizer: *Asociación de Alumnos de Telecomunicaciones de la Universidad de Zaragoza* (AATUZ).

XVI Jornadas de TeleCOM I+D, Zaragoza, 2007. Organizer: *Cátedra Telefónica Universidad de Zaragoza*.

II Jornadas de Comercio Electrónico y Administración Electrónica, Zaragoza, 2007. Organizador: *Cátedra Telefónica Universidad de Zaragoza*.

I Jornadas de Comercio Electrónico y Seguridad, Zaragoza, 2006. Organizer: *Cátedra Telefónica Universidad de Zaragoza*.

Participation in Research Projects

CyberCamp UNIZAR (ref. OTRI-2023/2040). Funding agency: Spanish National Cybersecurity Institute (INCIBE). Funding quantity: 242.786,47€. Principal investigator: **Ricardo J. Rodríguez**. Dates: November 2023 to December 2025. Research team: 7.

EINA UNIZAR Cybersecurity Strategic Project (ref. OTRI-2023/2038). Funding agency: Spanish National Cybersecurity Institute (INCIBE). Funding quantity: 865.126,56€. Principal investigator: **Ricardo J. Rodríguez**. Dates: October 2023 to December 2025. Research team: 12.

Malware Indicators of compromise enhanced by Memory Forensic Analysis (MIMFA) (ref. TED2021-131115A-I00). Funding agency: Spanish Ministry of Science and Innovation. Funding quantity: 129,835.00€. Principal investigator: **Ricardo J. Rodríguez**. Dates: December 2022 to November 2024. Research team: 6.

Secure-TBed4IIoT: Testbed para evaluación de seguridad en entornos IoT industriales (ref. JIUZ-2020-TEC-08). Funding agency: Fundación Ibercaja-Universidad de Zaragoza (local entity, call 2020). Funding quantity: 2,000€. Principal investigator: **Ricardo J. Rodríguez**. Dates:

January 2021 to December 2021. Research team: 7.

IN-FAST: Procedures to increase cybersecurity and protection of transport critical infrastructures (ref. IDI-20200146). Funding agency: *Spanish Ministry of Economy Industry and Competitiveness (CDTI call 2019)*. Funding quantity: 58,982.56€. Principal investigators: Javier Campos and **Ricardo J. Rodríguez**. Dates: April 2020 to October 2021. Research team: 4.

EU-GDPR: New data privacy regulation in the European Union – impact on EU citizens and organizations (EUPRIV8; ref. 611826-EPP-1-2019-1-ES-EPPJMO-PROJECT). Funding agency: *European Union (Jean Monnet 2019 call)*. Funding quantity: 59,865.50€. Principal investigators: **Ricardo J. Rodríguez**, Camino Fernández Llamas (University of León). Dates: September 2019 to February 2021. Research team: 12.

ModEl & Data-driven RESilience Engineering for complex dynamic systems (MEDRESE), supported by *Spanish Ministry of Economy and Competitiveness* (RTI2018-098543-B-I00). Project leaders: Simona Bernardi (UZ) and José Merseguer (UZ). Duration: from January 2019 to December 2020.

Mejora del Análisis y Desanonimización de Servicios Ocultos en TorHSScanner (ref. CUD-2018-09). Funding agency: *Centro Universitario de la Defensa-Zaragoza (local entity, call 2018)*. Funding quantity: 1,200€. Principal investigator: **Ricardo J. Rodríguez**. Dates: January 2019 to December 2019. Research team: 2.

Modelo del protocolo Tor y seguimiento de servicios ocultos (ref. CUD-2017-14). Funding agency: *Centro Universitario de la Defensa-Zaragoza (local entity, call 2017)*. Funding quantity: 1,500€. Principal investigator: **Ricardo J. Rodríguez**. Dates: January 2018 to December 2018. Research team: 2.

Análisis y Estudio de la Seguridad de Sistemas de Información y Gestión de datos en el Contexto de las Smart Cities y el Big Data (ref. UZCUD2017-TEC-09). Funding agencies: *Centro Universitario de la Defensa-Zaragoza and University of Zaragoza (local entities, call 2017)*. Funding quantity: 2,000€. Principal Investigators: Simona Bernardi (CUD) and Raquel Trillo-Lado (UZ). Dates: October 2017 to September 2018. Research team: 5.

Desarrollo de Técnicas de Detección de Ciberataques en Sistemas de Información mediante Minería de Procesos (ref. UZCUD2016-TEC-06). Funding agencies: *Centro Universitario de la Defensa-Zaragoza and University of Zaragoza (local entities, call 2016)*. Funding quantity: 2,000€. Principal Investigators: Simona Bernardi (CUD) and **Ricardo J. Rodríguez** (UZ). Dates: October 2016 to September 2017. Research team: 6.

Cyber-resilient critical infrastructures: Exploiting process mining techniques for security-by-design (ref. TIN2014-58457-R). Funding agency: *Spanish Ministry of Science and Innovation (call 2014)*. Funding quantity: 69,575€. Principal investigator: José Merseguer (UZ). Dates: January 2015 to December 2017. Research team: 5.

Consultoría para el análisis de procesos legítimos en volcados de memoria obtenidos de máquinas comprometidas (ref. 2019/0194). Funding agency: *Spanish National Intelligence Centre (local entity)*. Funding agency: 18,137.90€. Principal investigators: Javier Campos and **Ricardo J. Rodríguez**. Dates: April 8, 2019 to December 2019. Research team: 4.

Ticketing system audit (ref. 2019/0174). Funding agency: *SICOMORO SERVICIOS INTEGRALES, S.L. (local entity)*. Funding quantity: 12,100€. Principal investigators: Javier Campos and **Ricardo J. Rodríguez**. Dates: July 15, 2019 to December 2019. Research team: 2.

Consultoría para el análisis de procesos legítimos en volcados de memoria obtenidos de máquinas comprometidas (ref. 2018/003). Funding agency: *Spanish National Intelligence Centre (local entity)*. Funding agency: 18,137.90€. Principal investigator: **Ricardo J. Rodríguez**. Dates: March 15, 2018 to December 2018. Research team: 4.

Análisis de procesos legítimos en volcados de memoria obtenidos de máquinas comprometidas (ref. 2017/0097). Funding agency: Spanish *National Intelligence Centre (local entity)*. Funding agency: 21,659€. Principal investigators: Javier Campos and **Ricardo J. Rodríguez.** Dates: February 22, 2017 to December 2017. Research team: 3.

Computer forensics (ref. 2017/01). Funding agency: *several local entities*. Funding agency: 3,548.62€. Principal investigator: **Ricardo J. Rodríguez**. Dates: May 2016 to December 2017. Research team: 1.

DICE: Developing Data-Intensive Cloud Applications with Iterative Quality Enhancements, *Horizon 2020 European Union project*, grant number 644869. Project leader: José Merseguer (UZ). Duration: from October 2015 to February 2018.

Safety Certification of Software-intensive Systems with Re-usable Components, *ARTEMIS Joint Undertaking project, Grant Agreement* no. 295373 (cofunded by European Union and Spanish Ministry of Industry, Energy and Tourism). Project leader: Lars-Åke Fredlund (UPM). Duration: from March 2013 – March 2015.

Analysis and Control for Large Distributed Discrete-Events Systems, supported by *Spanish Ministry of Science and Innovation* (DPI2010-20413), Instituto de Investigación en Ingeniería de Aragón, Spain. Project leader: Manuel Silva. Duration: from April 2011 to March 2013.

Master Thesis Advisor

Análisis forense en sistemas Windows. Master's degree in Cybersecurity (International University of Valencia, Spain). *Course 2022/2023*. Student: Claudia de la Caridad LLauró Prado.

Identificación de funciones de biblioteca en programas compilados mediante técnicas basadas en grafos. Master's degree in Cybersecurity (International University of Valencia, Spain). *Course 2022/2023*. Student: Oleg Vasilenok.

Comparación de funciones a través del análisis del grafo de control de flujo. Master's degree in Research in Cybersecurity (University of León, Spain). *Course 2022/2023*. Student: Carmen Carrero Hurtado.

Inferencia de tipos de dato en ficheros ejecutables sin símbolos. Master's degree in Research in Cybersecurity (University of León, Spain). *Course 2022/2023*. Student: Pablo Ruiz Encinas.

Modelos de aprendizaje máquina para la detección de dominios maliciosos generados algorítmicamente. Master's degree in Research in Cybersecurity (University of León, Spain), course 2022/2023. Student: Tomás Pelayo Benedet.

Búsqueda eficiente de hashes de similitud aproximada. Master's degree in Informatics Engineering (University of Zaragoza, Spain). *Course 2022/2023*. Student: Daniel Huici Meseguer.

Sistema de análisis de software automático basado en ejecución simbólica de código fuente Ada. Master's degree in Research in Cybersecurity (University of León, Spain). *Course 2021/2022*. Student: Mario García Pérez.

Análisis, diseño e implementación de una honeynet para el estudio de malware en entornos industriales IoT. Master's degree in Research in Cybersecurity (University of León, Spain), course 2020/2021. Student: Ibai Castañón Osorio.

Extracción y análisis de artefactos de memoria de la aplicación Telegram Desktop. Master's degree in Research in Cybersecurity (University of León, Spain). *Course 2020/2021*. Student: Pedro Fernández Álvarez.

Data Exfiltration in IoT Protocols. Master's degree in Research in Cybersecurity (University of León, Spain). *Course 2019/2020*. Student: Daniel Uroz Hinarejos.

Análisis de malware mediante grafos de su comportamiento. Master's degree in Research in Cybersecurity (University of León, Spain). *Course 2019/2020*. Student: Fernando Heras Díez.

Ataques a Criptomonedas y seguimiento de carteras digitales, Master's Degree in Research in Cybersecurity. *Course 2018/2019*. Student: Javier Rodríguez Villalobos.

Desarrollo de una librería de usuario para detección de TOCTOU en entornos Linux, Master's Degree in Research in Cybersecurity. *Course 2018/2019*. Student: Razvan Raducu.

Análisis de criptografía usada por ransomware mediante instrumentación dinámica de binarios, Master's Degree in Research in Cybersecurity. *Course 2018/2019*. Student: Ignacio Samuel Crespo Martínez.

Análisis estático y comparativa de apps iOS provenientes de diferentes mercados de apps, Master's Degree in Research in Cybersecurity. *Course 2018/2019*. Student: Adrián Campazas Vega.

Análisis de la Gestión de Riesgos de una Oficina de Programa empleando la metodología AGILE, Master's Degree in Management and Procurement of Defense Systems. *Course 2018/2019*. Student: Miguel Ángel Santiago Gómez.

El apoyo de Ingeniería a los programas de la DGAM, Master's Degree in Management and Procurement of Defense Systems. *Course 2018/2019*. Student: Francisco Javier Millán Gamboa.

Bachelor Thesis Advisor

Oficina de Digitalización en Inditex. Bachelor's degree in Informatics Engineering. *Course 2023/2024*. Student: Daniel Lastanao Miró.

Las matemáticas de las criptomonedas: el caso de Bitcoin. Bachelor's degree in Mathematics. *Course 2023/2024*. Student: Luis Palazón Simón.

Sistema Integrado para la Gestión Centralizada de Logs. Bachelor's degree in Telecommunications Technology and Services Engineering. *Course 2023/2024*. Student: Iván Moreno Sanz.

Detección de ataques en redes de sistemas de control industrial mediante técnicas de aprendizaje máquina. Bachelor's degree in Telecommunications Technology and Services Engineering. *Course 2022/2023*. Student: Javier Morón Borraz.

Implementación de un DNS con capacidad de detección de dominios maliciosos generados algorítmicamente. Bachelor's degree in Telecommunications Technology and Services Engineering. *Course 2021/2022*. Student: Víctor Mateo Calvillo.

Implementación de un sistema SIEM en un sistema SCADA. Bachelor's degree in Telecom-

munications Technology and Services Engineering. *Course 2021/2022*. Student: Jaime del Amo Pamplona.

Detección de puntos de extensión de autoinicio en sistemas Linux. Bachelor's degree in Informatics Engineering. *Course 2021/2022*. Student: Carlos Navarro Gascón.

Prevalencia de tipos de ASEPs en malware de Windows. Bachelor's degree in Informatics Engineering. *Course 2021/2022*. Student: Carlos Borau González.

Infraestructura software para el arbitraje multiestratégico sobre criptomonedas. Bachelor's degree in Informatics Engineering. *Course 2020/2021*. Student: Daniel Huici Meseguer.

Sistema para categorización de textos en un ámbito nicho con pocos datos etiquetados. Bachelor's degree in Informatics Engineering. *Course 2020/2021*. Student: Miguel Escribano Pérez.

Infraestructura software para el análisis de las interacciones en Twitter: aplicación a la detección de trastornos de conducta alimentaria. Bachelor's degree in Informatics Engineering. *Course 2019/2020*. Student: Daniel Revillo Rey.

Sistema de fuzzing para identificación de tarjetas NFC. Bachelor's degree in Telecommunications Technology and Services Engineering. *Course 2019/2020*. Student: Pablo del Val Egido.

Prototipo de plataforma tipo SIEM para monitorización de alertas en un SOC. Bachelor's degree in Informatics Engineering. *Course 2019/2020*. Student: Miguel Yanes Fernández.

Estudio de la Obtención de Información en las Compañías de Infantería, Bachelor's Degree in Industrial Engineering. *Course 2018/2019*. Student: Victor Pérez García-Miguel.

Posibilidades de Mando, Control y Comunicaciones en el VCI Pizarro, Bachelor's Degree in Industrial Engineering. *Course 2018/2019*. Student: Raúl Uña Jurado.

Generación automática de reglas de seguridad en base a registros de sistema, Bachelor's Degree in Informatics Engineering. *Course 2017/2018*. Student: Asier Salueña Sediles.

Ataques de retransmisión inteligente en protocolos de pago NFC, Bachelor's Degree in Informatics Engineering. *Course 2017/2018*. Student: Guillermo Cebollero Abadías.

Análisis de vulnerabilidades y securización del protocolo Modbus/TCP, Bachelor's Degree in Telecommunication Technologies and Services Engineering. *Course 2017/2018*. Student: Ibai Marcos Cincunegui.

Modelización del protocolo Tor y extracción de características de servicios ocultos, Bachelor's Degree in Informatics Engineering. *Course 2017/2018*. Student: Jorge García de Quirós Giménez.

Estado de la ciberseguridad en los medios CIS tácticos de una BOP, Bachelor's Degree in Industrial Engineering. *Course 2017/2018*. Student: CAC. Juan Ignacio Olivares González.

Estudio sobre el análisis de software malicioso en ambientes tácticos, Bachelor's Degree in Industrial Engineering. *Course 2017/2018*. Student: CAC. Pedro León Millán.

Optimización mediante Búsqueda Tabú para problemas no lineales en Redes de Petri, Computer Engineering (5-year degree). *Course 2016/2017*. Student: Luis Ignacio Frisón Alegre.

Evaluación de algoritmos de fuzzy hashing para similitud entre procesos, Bachelor's Degree

in Informatics Engineering. *Course 2016/2017*. Student: Iñaki Abadía Osta.

Búsqueda de conjuntos ROP Turing-completos en sistemas Windows, Bachelor's Degree in Informatics Engineering. *Course 2015/2016*. Student: Daniel Uroz Hinarejos.

Análisis de tamaño, rendimiento y resistencia de algoritmos de detección y corrección de error en comunicaciones frente a fallos, Bachelor's Degree in Telecommunication Technologies and Services Engineering. *Course 2015/2016*. Student: Santiago Sarasa Castiella.

Análisis de la resistencia del DNIe3.0 ante el robo de identidad mediante tecnología NFC, Bachelor's Degree in Informatics Engineering. *Course 2015/2016*. Student: Víctor Sánchez Ballabriga.

Defensa proactiva y reactiva ante ataques DDoS en un entorno simulado de redes definidas por software, Bachelor's Degree in Telecommunication Technologies and Services Engineering. *Course 2015/2016*. Student: Jorge Paracuellos Cortés.

Prevención de ataques ROP en ejecutables mediante instrumentación dinámica, Computer Engineering (5-year degree). *Course 2014/2015*. Student: Miguel Martín Pérez.

Ataques de relay en NFC con dispositivos Android, Computer Engineering (5-year degree). *Course 2013/2014*. Student: José Vila Bausili.

Extensión de funcionalidades de la herramienta `PeabraiN`, Computer Engineering (5-year degree). *Course 2013/2014*. Student: Iván Pamplona Cetina.

Análisis de rendimiento y niveles de protección de protectores de software, Computer Engineering (5-year degree). *Course 2013/2014*. Student: María Asunción Bazús Castán.

Estudio comparativo de frameworks de Instrumentación Dinámica de Ejecutables, Computer Engineering (5-year degree, **awarded with Honor Degree**). *Course 2011/2012*. Student: Juan Antonio Artal Lozano.

Honors, Awards, & Fellowships

TU Ilmenau Visiting Professors, fellowship of the *TU Ilmenau* (Germany) for supporting visiting research activities (March 2017).

Programa CAI-Europa Fellow, fellowship of the *Caja de Ahorros de la Inmaculada* for supporting visiting research activities (May 2016).

"Sociedad de la Computación Concurrente y Distribuida" best contribution award at *XXIII Jornadas de Concurrencia y Sistemas Distribuidos*, granted by *Sociedad científica de la Computación Concurrente y Distribuida*, Málaga, Spain (June 2015).

Fellowship granted to attend to the summer school "La ciberseguridad y la protección de la información", held at Santander in July 7th – 10th, 2014, by *Instituto Español de Estudios Estratégicos*.

"Sociedad de la Computación Concurrente y Distribuida" best student contribution award at *XX Jornadas de Concurrencia y Sistemas Distribuidos*, granted by *Sociedad científica de la Computación Concurrente y Distribuida*, Pamplona, Spain (June 2012).

Movilidad de estudiantes para la obtención de Mención Europea, fellowship of the *Ministry of Education* for supporting visiting research activities (December 2011).

Programa CAI-Europa Fellow, fellowship of the *Caja de Ahorros de la Inmaculada* for support-

ing visiting research activities (July 2011).

GISED PhD Fellow, fellowship of the *Group of Discrete Event Systems Engineering* (GISED), University of Zaragoza, Spain. GISED is accredited as Research Group of Excellence by the Aragonese Government – Ref. T27 – (July 2009 — March 2011).

ITA Postgraduate Fellow, fellowship of the *Instituto Tecnológico de Aragón*, Zaragoza, Spain (June 2008 — June 2009).

Others Worths

Forensic Computer Engineer.

Vice-president of Asociación de Ingenieros en Informática (AI2, Association of Computer Engineers), 2011 – (until the present).

Founding partner and volunteer at Universitarios con la infancia (NPO), 2010 – (until the present). Former affiliated with Save the Children NPO, Spain.

President of Asociación de Ingenieros en Informática de Aragón (AI2Aragón, Association of Computer Engineers of Aragon), 2009 – (until the present).

Management of activities and training courses.

Volunteer at Engineers without Borders (Ingenieros Sin Fronteras, NPO), 2009 – 2011.

Languages

Mother tongue: Spanish

Other languages: English, French, Arabic

Self-assessment: (following Common European Framework of Reference (CEF) level)

	Understanding		Speaking		Writing	
English	B2	Independent user	B2	Independent user	B2	Independent user
French	A1	Basic user	A1	Basic user	A1	Basic user
Arabic	A1	Basic user	A1	Basic user	A1	Basic user

Miscellaneous

I am a holder of a Spanish drivers license. Category B vehicle.

First Certificate in English (FCE).

Reference letters

Available upon request.