

Daniel Ricardo dos Santos, PhD

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WORK EXPERIENCE	Eindhoven University of Technology	Eindhoven, Netherlands
	<i>Researcher</i>	Apr/2017 - Current
	<ul style="list-style-type: none">Working on the design and development of network intrusion detection for cyber-physical systems (industrial control, building automation, etc).	
	SAP Labs	Sophia Antipolis, France
	<i>Visiting researcher</i>	Feb-Jun/2014; Apr-Jun/2015; Feb-Jun/2016
	<ul style="list-style-type: none">Designed and developed a tool to test web application exploits in multiple environments, using Selenium and Docker.Integrated research prototypes for run-time workflow monitoring into SAP platforms.	
	Fondazione Bruno Kessler	Trento, Italy
	<i>Researcher</i>	Sep/2013 - Mar/2017
	<ul style="list-style-type: none">Designed and developed techniques and tools based on formal methods for security enforcement of workflows and web applications.Tested the security of Android apps and web applications, in collaboration with PosteItaliane.	
	SecPlus	Florianópolis, Brazil
	<i>Security consultant</i>	Oct/2012 - Jul/2013
	<ul style="list-style-type: none">Conducted penetration testing and security assessments for several companies.Contributed to open source projects for the analysis of Linux malware and for secure development in PHP.	
	AltoQi	Florianópolis, Brazil
	<i>C++ developer</i>	Oct/2011 - Apr/2012
	<ul style="list-style-type: none">Implemented parts of the graphics and database modules of a CAD software for civil engineering, using the Windows API and SQLite.Worked as part of a Scrum team using agile methodology.	
	Federal University of Santa Catarina	Florianópolis, Brazil
	<i>Research assistant</i>	Jul/2010 - Jul/2011; May/2012 - Jul/2013
	<ul style="list-style-type: none">Implemented identity management, access control, and security monitoring systems for cloud computing, using technologies such as SAML, OpenStack, and Nessus.	
	EDUCATION	
	PhD. in Computer Science - University of Trento, Italy	2017
	MSc. in Computer Science - Federal University of Santa Catarina, Brazil	2013
	BSc. in Computer Science - Federal University of Santa Catarina, Brazil	2011
	SKILLS	
	Programming: Python, Java, C/C++, PHP, JavaScript.	
	Others: penetration testing, project management.	
	Languages: Portuguese (Native), English (Fluent), Italian (Basic).	

Academic activities

TEACHING ASSISTANCE	Offensive Security (MSc., University of Trento)	2014
	Operating Systems (BSc., Federal University of Santa Catarina)	2013
	Computer Networks (BSc., Federal University of Santa Catarina)	2013
RESEARCH PROJECTS	EU-H2020-CITADEL, EU-FP7-SECENTIS, CNPq-AutoManSec4Cloud.	
REVIEWER FOR CONFERENCES AND JOURNALS	CloudCom 2017, ICFEM 2017, SACMAT 2017, TMPA 2017, POST 2016, CODASPY 2016, DPM 2016, STM 2015, DBSec 2015, LATA 2014, Computer Networks, Computers & Security, Journal of Information Security and Applications, Journal of Network and Computer Applications, Journal of Networks and Systems Management, Security and Communication Networks.	
SUMMER SCHOOLS	Executive School on Post-Quantum Cryptography	2017
	European Summer School in Logic, Language, and Information	2016
	SECENTIS Winter School - Security of Enterprise Information Systems	2016
	IEEE Italy Section School of Career Boosting	2015
	Marktoberdorf Summer School - Dependable Software Systems Engineering	2014
	UFSC Mathematics Summer School - Axiomatic Set Theory, Real Analysis	2011
ONLINE COURSES	Machine Learning (Coursera)	2015

List of publications

- JOURNAL ARTICLES
- J1. S. Dashevskiy, **D.R. dos Santos**, F. Massacci, A. Sabetta. “*TestREx: a Framework for Repeatable Exploits*” in International Journal on Software Tools for Technology Transfer, 2017 (In press)
 - J2. **D.R. dos Santos**, S. Ranise, L. Compagna, S.E. Ponta. “*Automatically Finding Execution Scenarios to Deploy Security-Sensitive Workflows*” in Journal of Computer Security, vol. 25, no. 3, 2017
 - J3. **D.R. dos Santos**, R. Marinho, G.R. Schmitt, C.M. Westphall, C.B. Westphall. “*A Framework and Risk Assessment Approaches for Risk-based Access Control in the Cloud*” in Journal of Network and Computer Applications, vol. 74, 2016
 - J4. E.A. Rigon, C.M. Westphall, **D.R. dos Santos**, C.B. Westphall. “*A Cyclical Evaluation Model of Information Security Maturity*” in Information Management and Computer Security, vol. 22, no. 3, 2014
 - J5. **D.R. dos Santos**, T.J. Nascimento, C.M. Westphall, M.A.P. Leandro, C.B. Westphall. “*Privacy-preserving identity federations in the cloud: a proof of concept*” in International Journal of Security and Networks, vol. 9, no. 1, 2014
 - J6. C.B. Westphall, C.M. Westphall, F.L. Koch, G.A. Geronimo, J. Werner, R.S. Mendes, P.F. Silva, **D.R. dos Santos**, R.F. Souza, M.M. Mattos, S.R. Villareal, R. Weingartner, L. Defenti, A.A. Flores, R.R. Freitas, G.B. Brascher. “*Operation, Management, Security and Sustainability for Cloud Computing*” in Revista de Sistemas de Informação da FSMA, vol. 2014, no. 13, 2014
 - J7. R.F. de Souza, C.B. Westphall, **D.R. dos Santos**, C.M. Westphall. “*A Review of PACS on Cloud for Archiving Secure Medical Images*” in International Journal of Privacy and Health Information Management, vol. 1, no. 1, 2013
- CONFERENCE AND WORKSHOP PAPERS
- C1. D. Fauri, **D.R. dos Santos**, E. Costante, J. den Hartog, S. Etalle, S. Tonetta. “*From System Specification to Anomaly Detection (and back)*” in 3rd ACM Workshop on Cyber-Physical Systems Security & Privacy (CPS-SPC), Proceedings of the ACM Conference on Computer and Communications Security (CCS), 2017
 - C2. **D.R. dos Santos**, S. Ranise. “*On Run-time Enforcement of Authorization Constraints in Security-Sensitive Business Processes*” in Proceedings of the 15th International Conference on Software Engineering and Formal Methods (SEFM), 2017
 - C3. L. Compagna, **D.R. dos Santos**, S.E. Ponta, S. Ranise. “*Aegis: Automatic Enforcement of Security Policies in Workflow-driven Web Applications*” in Proceedings of the 7th ACM Conference on Data and Applications Security and Privacy (CODASPY), 2017
 - C4. **D.R. dos Santos**, S.E. Ponta, S. Ranise. “*Modular Synthesis of Enforcement Mechanisms for the Workflow Satisfiability Problem: Scalability and Reusability*” in Proceedings of the 21st ACM Symposium on Access Control Models and Technologies (SACMAT), 2016
 - C5. L. Compagna, **D.R. dos Santos**, S.E. Ponta, S. Ranise. “*Cerberus: Automated Synthesis of Enforcement Mechanisms for Security-sensitive Business Processes*” in Proceedings of the 22nd International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS), 2016
 - C6. **D.R. dos Santos**, S. Ranise, L. Compagna, S.E. Ponta. “*Assisting the Deployment of Security-Sensitive Workflows by Finding Execution Scenarios*” in Proceedings of the 29th Annual IFIP WG 11.3 Conference on Data and Applications Security and Privacy (DBSec), 2015. **Best Student Paper Award**
 - C7. C. Bertolissi, **D.R. dos Santos**, S. Ranise. “*Automated Synthesis of Run-time Monitors to Enforce Authorization Policies in Business Processes*” in Proceedings of the 10th ACM Symposium on Information, Computer and Communications Security (ASIACCS), 2015

- C8. S. Dashevskiy, **D.R. dos Santos**, F. Massacci, A. Sabetta. *“TESTREX: a Testbed for Repeatable Exploits”* in 7th Workshop on Cyber Security Experimentation and Test (CSET), Proceedings of the 23rd USENIX Security Symposium, 2014
- C9. P.A.F. Vitti, **D.R. dos Santos**, C.B. Westphall, C.M. Westphall, K.M.M. Vieira. *“Current Issues in Cloud Computing Security and Management”* in Proceedings of the 8th International Conference on Emerging Security Information, Systems and Technologies (SECURWARE), 2014
- C10. **D.R. dos Santos**, C.M. Westphall, C.B. Westphall. *“A dynamic risk-based access control architecture for cloud computing”* in Proceedings of the IEEE/IFIP Network Operations and Management Symposium (NOMS), 2014
- C11. P. Silva, C.B. Westphall, C.M. Westphall M. Mattos, **D.R. dos Santos**. *“An Architecture for Risk Analysis in Cloud”* in Proceedings of the 10th International Conference on Networking and Services (ICNS), 2014
- C12. **D.R. dos Santos**, C.M. Westphall, C.B. Westphall. *“Risk-based Dynamic Access Control for a Highly Scalable Cloud Federation”* in Proceedings of the 7th International Conference on Emerging Security Information, Systems and Technologies (SECURWARE), 2013
- C13. R.F. de Souza, C.B. Westphall, **D.R. dos Santos**, C.M. Westphall. *“Challenges of Operationalizing PACS on Cloud Over Wireless Networks”* in Proceedings of the 9th International Conference on Wireless and Mobile Communications (ICWMC), 2013
- C14. R.B. Brinhosa, C.M. Westphall, C.B. Westphall, **D.R. dos Santos**, F. Grezele. *“A Validation Model of Data Input for Web Services”* in Proceedings of the 12th International Conference on Networks (ICN), 2013
- C15. M.A.P. Leandro, T.J. Nascimento, **D.R. dos Santos**, C.M. Westphall, C.B. Westphall. *“Multi-Tenancy Authorization System with Federated Identity for Cloud-Based Environments Using Shibboleth”* in Proceedings of the 11th International Conference on Networks (ICN), 2012
- C16. **D.R. dos Santos**, C.M. Westphall, *“Uma aplicação de privacidade no gerenciamento de identidades em nuvem com uApprove”* in Workshop de Trabalhos de Iniciação Científica e Graduação (WTICG), Anais do Simpósio Brasileiro em Segurança da Informação e de Sistemas Computacionais (SBSEG), 2011

THESES

- T1. **D.R. dos Santos**, *“Automatic Techniques for the Synthesis and Assisted Deployment of Security Policies in Workflow-based Applications”*, PhD. thesis, University of Trento, 2017
- T2. **D.R. dos Santos**, *“Uma Arquitetura de Controle de Acesso Dinâmico Baseado em Risco para Computação em Nuvem”*, MSc. thesis, Federal University of Santa Catarina, 2013
- T3. **D.R. dos Santos**, *“Gerenciamento de Identidades e Privacidade em Ambientes de Computação em Nuvem”*, BSc. thesis, Federal University of Santa Catarina, 2011

TECHNICAL REPORTS

- R1. **D.R. dos Santos**, S. Ranise. *“A Survey on Workflow Satisfiability, Resiliency, and Related Problems”*, arXiv, 2017

PATENTS

- P1. S.E. Ponta, L. Compagna, **D.R. dos Santos**, S. Ranise, *“Secure and Compliant Execution of Processes”*. US Patent Application 20170300701
- P2. A. Sabetta, L. Compagna, S.E. Ponta, S. Dashevskiy, **D.R. dos Santos**, F. Massacci. *“Multi-context Exploit Test Management”*. US Patent 9811668

VULNERABILITIES

- V1. CVE-2013-2618, Network Weathermap 0.97a Cross Site Scripting
- V2. CVE-2013-2619, Aspen 0.8 Directory Traversal