Daniel Ricardo dos Santos

CONTACT
INFORMATION

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EDUCATION

University of Trento (UNITN), Italy

PhD. in Computer Science Expected graduation: 03/2017

University of Santa Catarina (UFSC), Brazil

MSc. in Computer Science 10/2011 - 08/2013
BSc. in Computer Science 03/2007 - 07/2011

WORK
EXPERIENCE

Fondazione Bruno Kessler (FBK) - Trento, Italy

Junior Researcher 09/2016 - Current

- Performed static and dynamic security analysis of Android applications, in collaboration with the PosteItaliane Cyber Security Innovation lab.

Early Stage Researcher 09/2013 - 08/2016

- Designed and developed techniques and tools based on formal methods for security analysis and enforcement of workflow-driven applications and web applications.
- Part of the SECENTIS European Industrial Doctorate project.

SAP Labs (FBK collaboration) - Sophia Antipolis, France

Early Stage Researcher 09/2013 - 08/2016

- Designed and developed a tool to test web application exploits in multiple environments, using Selenium and Docker.
- Integrated a research prototype for run-time workflow monitoring into the SAP HANA Operational Intelligence platform.

SecPlus - Florianópolis, Brazil

Information Security Consultant 10/2012 - 07/2013

- 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

C++ developer 10/2011 - 04/2012

- Implemented parts of the graphics and database modules of QiBuilder, a CAD software for civil engineering, using the Windows API and SQLite.
- Worked as part of a Scrum team using agile methodology.

Networks and Management Laboratory, UFSC - Florianópolis, Brazil

Research Assistant 07/2010 - 07/2013

- Implemented identity management, access control, and security monitoring systems for cloud computing, using technologies such as SAML and OpenStack.

SKILLS

Programming languages: Python, Java, C/C++, PHP, JavaScript.

Technical expertise: Agile methodology (TDD, Scrum, XP), Linux/UNIX systems, databases (MySQL, HANA, SQLite), version control (SVN, Git), penetration testing (network, web, and mobile), formal methods (model checking, SMT).

Soft skills: Quick learner with good communication skills (verbal and written). Capable of working independently and in teams. Efficient project manager.

Languages: Portuguese (Native), English (Fluent), Italian (Intermediate).

FURTHER EDUCATION	**Summer/Winter Schools:**

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:

Machine Learning (Coursera - Andrew Ng, Stanford)	2015

AWARDS	Best Student Paper (DBSec Conference)	2015

OTHER INTERESTS	**Martial arts**: Wado-ryu Karate black belt (1st dan)
	Volunteering: Boy Scout leader (2010-2013)

List of publications

JOURNALS

J1. **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, October, 2016

J2. C.B. Westphall et al. *"Operation, Management, Security and Sustainability for Cloud Computing"* in Revista de Sistemas de Informação da FSMA, vol. 2014, no. 13, 2014

J3. 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

J4. **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

J5. 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

CONFERENCES AND WORKSHOPS

C1. 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

C2. **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

C3. 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

C4. **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

C5. 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

C6. S. Dashevskyi, **D.R. dos Santos**, F. Massacci, A. Sabetta. *"TESTREX: a Testbed for Repeatable Exploits"* in Proceedings of the 7th Workshop on Cyber Security Experimentation and Test (CSET), 2014

C7. 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

C8. **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

C9. 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

C10. **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

C11. 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

C12. 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

C13. 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

C14. **D.R. dos Santos**, C.M. Westphall, *"Uma aplicação de privacidade no gerenciamento de identidades em nuvem com uApprove"* in 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

PATENTS

P1. S.E. Ponta, L. Compagna, **D.R. dos Santos**, S. Ranise, *"Secure and Compliant Execution of Processes"*. Filed on 13/04/2016 (under USPTO review)

P2. A. Sabetta, L. Compagna, S.E. Ponta, S. Dashevskyi, **D.R. dos Santos**, F. Massacci. *"Multi-context Exploit Test Management"*. United States Patent 20160314302

VULNERABILITIES

V1. CVE-2013-2618, Network Weathermap 0.97a Cross Site Scripting

V2. CVE-2013-2619, Aspen 0.8 Directory Traversal

Academic activities

SCIENTIFIC AND PROFESSIONAL ASSOCIATIONS	• Association for Computing Machinery (ACM)	2015 - Current
	• IFIP Data and Applications Security and Privacy (WG11.3)	2015 - Current
	• Joint Conferences on Theory and Practice of Software (ETAPS)	2016 - Current
	• IEEE Communications Society (ComSoc)	2014 - 2015

RESEARCH PROJECTS

- SECENTIS - Security and Trust of Next Generation Enterprise Information Systems 2013-2016
- AutoMan&Sec4Cloud - Autonomic Management and Security for Cloud Computing 2013
- GESCONGRECO - Gerência e Segurança para Computação em Nuvem, Grade e Redes Cognitivas 2010-2013

TEACHING ASSISTANCE

- Applied Security - Offensive Technologies (MSc.) - UNITN, Italy 2014
- Operating Systems (BSc.) - UFSC, Brazil 2013
- Computer Networks (BSc.) - UFSC, Brazil 2013

REVIEWER FOR JOURNALS

- Computer Networks
- Journal of Networks and Systems Management
- Security and Communication Networks

EXTERNAL REVIEWER FOR CONFERENCES

- 11th International Workshop on Data Privacy Management (DPM 2016)
- 11th International Workshop on Security and Trust Management (STM 2015)
- 29th IFIP Conference on Data and Applications Security and Privacy (DBSec 2015)

MEMBER OF THESIS COMMITTEES

- Gustavo Roecker Schmitt, *"Utilização do Modelo de Controle de Acesso RAdAC (Risk-Adaptive Access Control) em um Ambiente de Computação em Nuvem"*, BSc. thesis, Federal University of Santa Catarina, 2014.
- Max Alexandre Zanelato, *"Proposta de um modelo de biblioteca cliente para o Shibboleth: Facilitando a adaptação das aplicações"*, BSc. thesis, Federal University of Santa Catarina, 2014.