

José Jair Cardoso de Santanna

Enthusiastic Teacher & Researcher, Internet Security Specialist and (Big) Data Analyst

Contact

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Languages

Dutch ★★☆☆☆
Spanish ★★☆☆☆
English ★★★★★
Portuguese ★★★★★

Status and Professional Objective

I am currently PhD researcher at University of Twente (finishing in mid-2017). Some results of my research achieved recognition in the national and international level; for example, I had the opportunity to advise the Dutch National Cyber Security Center and the Japanese Ministry of Internal Affairs and Communications, both on the topic of Cyber Security. I presented my work in more than 20 countries. The most frequent words to describe my presentations/lectures by attendees are enthusiastic, entertaining and easy to understand (http://jairsantanna.com/others_judgement). My professional objective is to become an internationally recognized researcher and teacher in Internet security and big data analysis. I aim to transfer my enthusiasm, knowledge, skills and experience into meaningful innovation to improve the security in all types of computer networks, especially the Internet.

Education

2013–ago/2017 **Doctor** in Computer Science University of Twente, The Netherlands
“The Multidisciplinary Investigation of Botnet, The DDoS for Hire Phenomenon”.
Supervisor: Prof. Dr. Ir. Aiko Pras
This ongoing work has been used by both the security community and by network operators worldwide. One of the outcomes that stands out is publicly available at ‘botnetblacklist.com’ and already downloaded by more than two thousand users worldwide.

2010–2012 **Master** in Computer Science Federal University of Rio Grande do Sul, Brazil
“A BPM-based Solution for Inter-domain Circuit Management”.
Supervisor: Prof. Dr. Lisandro Zambenedetti Granville
The outcome of this work is still in production used by the Brazilian National Education and Research Network and available at ‘meican.cipo.rnp.br’.

2005–2010 **Bachelor** in Computer Engineer Federal University of Pará, Brazil
“A Comparative Evaluation of DCCP Protocol in Mesh Networks.”
Supervisor: Dr. Kelvin Lopes Dias

Experience

Technical Adviser

2016 **To the Yokohama National University** Japan
For the production of a report on “Reflection & Amplification DDoS attacks” requested by the Japanese Ministry of Internal Affairs and Communications.

2016 **To the Dutch National Cyber Security Center and the Scientific Research & Documentation Center** The Netherlands
For the production of a report on “Cyber metrics 2016: DDoS and Malware” requested by the Dutch Ministry of Security and Justice.

Lecturer

2012–2013 **University of Santa Cruz do Sul (UNISC)** Santa Cruz do Sul, Brazil
Tasks & Responsibilities: Supervise students and teach (integrally) the courses:
• Digital Systems;
• Computer Networks; and
• Network Management.

Guest Lecturer

Most of my slides are available at slideshare.net/jjcsantanna; some interactive exercises are available at github.com/jjsantanna/lectures_hands_on; and, most important, there is some voluntary judgment and testimonies of students/attendees available at bit.ly/presentation_evaluation.

- 2016 & 2017 **Network Management** University of Twente, The Netherlands
Lectures: (1) “SNMPv1, v2, v3 and Beyond” and (2) “Network management based on WebServices”
Audience: master students of computer science, electrical engineer, and telematics from the University of Twente.
- 2015 & 2016 **Product Design to Online Business** University of Twente, The Netherlands
Lectures: (1) “Booters: the DDoS-as-a-Service phenomenon” and (2) “Product Design to Online Business”
Audience: bachelor students of industrial engineering and business information technology.
- 2015 **Network Security** University of Twente, The Netherlands
Lecture: “DDoS attacks into the Matrix”
Audience: master and bachelor students of computer science, electrical engineer, and telematics from the University of Twente, 3TU cyber security, and members of ICT labs.
- 2015 **Cybercrime & Cybersecurity (minor)** University of Twente, The Netherlands
Lecture: “DDoS attacks - Back to the future”
Audience: bachelor students from University of Twente, European Research Center for Information (ERCIS), Westfälische Wilhelms □ Universität Münster, Universität Innsbruck, and University of Leicester.

Student Supervisor

Among 10 supervised students: 6 had their research published in international academic conferences, 5 decided to follow towards the next academic degree [] (Ph.D. or M.Sc.), 2 received the M.Sc. degree cum laude [+], 1 won the best paper award in an international conference [#], 1 won the second place of a renowned Dutch national prize (KIVI/Defensie & Veiligheid) for her thesis [!], and 1 is working as Digital Expert for the Dutch National High Tech Crime Unit [§].*

[**M.Sc. Degree**] Kareem Fouda, Justyna Chromik[* , +, !] , Wouter de Vries[* , #] , Joey de Vries[+], Mark Wierbosch, and Jarmo van Lenthe[§].

[**B.Sc. Degree**] Calvin Hendriks, Roeland Krak[*], Max Kerkers[*], Dirk Maan[*], Jochum Börger, and Guilherme Dressler.

Journal and Conference Reviewer

Among more than 20 venues acting as a reviewer I highlight bellow only journals (3) and the (3) top well ranked conferences by the (IEEE) Committee on Network Operation and Management (CNOM). While for journal I added the ‘impact factor’ and the ‘h-index’ metrics, for conferences the ‘acceptance rate’ and, also, the ‘h-index’, respectively.

TNSM	Transactions on Network and Service Management	3.134 25
COMCOM	Computer Communications	2.099 49
JNSM	Journal of Network and Systems Management	0.796 15
IJNM	International Journal of Network Management	0.681 10
CNSM	International Conference on Network and Service Management	17.6% 18
NETWORKING	IFIP Networking	23.8% 22
IM	IFIP/IEEE Integrated Management	27.2% 18

Conference Organizer

2016	Shadow Technical Program Committee (TPC) <i>IFIP/IEEE International Conference on Network and Service Management is the premier conference in the area of network and service management. A shadow TPC is an experimental initiative for PhDs become better TPCs in the future. My reviews have the same weight as the actual TPC reviews.</i>	CNSM
2013-2016	Technical Program Committee (TPC) <i>Escola Regional de Redes de Computadores (pt_br), a conference for undergrad students from the south of Brazil. To motivate students to</i>	ERRC
2012	Local Organizing Committee <i>IEEE Latin American Conference on Cloud Computing and Communications.</i>	LatinCloud
2010	Local Organizing Committee <i>The Brazilian Symposium on Computer Networks and Distributed Systems.</i>	SBRC

Presentations

In the last 3 years I gave more than 30 presentations, which is almost one per month. Most of the presentations are available at 'slideshare.net/jjcsantanna'. Among invited presentations, presentations that required abstract and presentations approved after a very strict peer-reviewing process (conferences) I highlight the following.

Invited	To Logius (part of the Dutch Ministry of Interior and Kingdom Relations)	2015
Invited	To the Dutch Organization of Internet Providers (NBIP)	2015
Invited	To the Dutch National Cyber Security Centrum (NCSC)	2015
Abstract	36 th IRTF Network Management Research Group (NMRG)	2015
Abstract	31 th IRTF Network Management Research Group (NMRG)	2013

Rewards & Awards

2016	Best Poster Presentation	2nd Cyber Security Workshop in the Netherlands
2016	ACM SIGCOMM Travel Grant	Internet Measurement Conference (IMC)
2016	IFIP/DMTF Travel Grant	Conference on Network and Service Management (CNSM)
2016	Invited to the Dagstuhl Seminar 16361	on Security Challenges and Opportunities of SDN
2015	Best Paper Award	Autonomous Infrastructure, Management and Security Conference
2015	Best Ph.D. 'Elevator Pitch' (1st Place)	CTIT Symposium, University of Twente
2015	Best Poster Presentation (3rd Place)	CTIT Symposium, University of Twente
2015	Invited to the Dagstuhl Seminar 16012	on Global Measurements
2010	Student Award (3rd Place)	Computer Engineer, Federal University of Pará, Brazil

Scientific Appendix

Publications

Booters: Can Anything Justify Distributed Denial-of-Service (DDoS) Attacks for Hire?

David Douglas, José Jair Santanna, Ricardo O. Schmidt, Lisandro Granville, Aiko Pras

Journal of Information, Communication & Ethics in Society (JICES) 15.1 (2017). 2017

Quite Dogs Can Bite: Which Booters Should We Go After? And What Are Our Mitigation Options?

José Jair Santanna, Ricardo O. Schmidt, Daphne Tuncer, Anna Sperotto, Lisandro Granville, Aiko Pras

IEEE Communication Magazine (ComMag) July [to appear] (2017). 2017

DDoS 3.0 - How Terrorists Bring Down the Internet

Aiko Pras, José Jair Santanna, Jessica Steinberger, Anna Sperotto

International GI/ITG Conference, MMB & DFT (invited), 2016

Booter Blacklist: Unveiling DDoS-for-hire Websites

José Jair Santanna, Ricardo O. Schmidt, Daphne Tuncer, Joey Vries, Lisandro Granville, Aiko Pras

International Conference on Network and Service Management (CNSM)[acceptance 17.6%], 2016

Ludo – kids playing Distributed Denial of Service

Jessica Steinberger, José Jair Santanna, Evangelos Spatharas, Hendrik Amler, Niklas Breuer, Kristian Gaul, Benjamin Kuhnert, Ulrike Piontek, Anna Sperotto, Harald Baier, Aiko Pras

TERENA Networking Conference (TNC) (abstract), 2016

Booter websites characterization: Towards a list of threats

Justyna Joanna Chromik, José Jair Santanna, Anna Sperotto, Aiko Pras

Brazilian Symposium on Computer Networks and Distributed Systems (SBRC)[acceptance 30%], 2015

Inside Booters: An Analysis on Operational Databases

José Jair Santanna, Romain Durban, Anna Sperotto, Aiko Pras

IFIP/IEEE International Symposium on Integrated Network Management (IM)[acceptance 27.2%], 2015

Booters - An Analysis of DDoS-as-a-Service Attacks.

José Jair Santanna, Roland Rijswijk-Deij, Anna Sperotto, Rick Hofstede, Mark Wierbosch, Lisandro Granville, Aiko Pras

IFIP/IEEE International Symposium on Integrated Network Management (IM)[acceptance 27.2%], 2015

How Asymmetric Is the Internet? A Study to Support the Use of Traceroute

Wouter Vries, José Jair Santanna, Anna Sperotto, Aiko Pras

International Conference on Autonomous Infrastructure, Management and Security (AIMS)[acceptance 31.8%], 2015

Characterisation of the Kelihos.B Botnet

Max Kerkers, José Jair Santanna, Anna Sperotto

International Conference on Autonomous Infrastructure, Management and Security (AIMS)[acceptance 31%], 2014

Characterizing and Mitigating The DDoS-as-a-Service Phenomenon

José Jair Santanna, Anna Sperotto

International Conference on Autonomous Infrastructure, Management and Security (AIMS)[acceptance 31%], 2014

Through the Internet of Things - A Management by Delegation Smart Object Aware System (MbDSAS)

Marcelo Marotta, Felipe Carbone, José Jair Santanna, Liane Tarouco

IEEE Computer Software and Applications Conference (COMPSAC)[acceptance 17%], 2013

A BPM-based solution for inter-domain circuit management

José Jair Santanna, Juliano Wickboldt, Lisandro Granville

IEEE Network Operations and Management Symposium (NOMS)[acceptance 26.2%], 2012

Internet of Things in healthcare: Interoperability and security issues

Liane Tarouco, Leandro Bertholdo, Lisandro Granville, Marcelo Marotta, José Jair Santanna

IEEE International Conference on Communications (ICC)[acceptance 37%], 2012