

# José Jair Cardoso de Santanna

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

## Contact

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/0...2-8361-6729   
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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 already 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](http://jairsantanna.com/others_judgement)). My professional objective is to become an internationally recognized researcher and teacher in cyber security. I aim to transfer my enthusiasm, knowledge, skills and experience into meaningful innovation to improve the security in all types of networks, specially in the Internet.

## Education

2013–ago/2017\* **Doctor** in Computer Science University of Twente, The Netherlands  
“The Investigation of the DDoS as a Service Phenomenon”.  
Supervisor: Prof. Dr. Ir. Aiko Pras  
This ongoing work has being used by both the security community and by network operators worldwide. One of the outcomes that stands out is publicly available at ‘[booterblacklist.com](http://booterblacklist.com)’ and already downloaded by more than four hundred 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](http://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.

### Assistant Professor

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](https://slideshare.net/jjcsantanna); some interactive exercises are available at [github.com/jjcsantanna/lectures\\_hands\\_on](https://github.com/jjcsantanna/lectures_hands_on); and, most important, there is some voluntary judgment and testimonies of students available at [bit.ly/presentation\\_evaluation](https://bit.ly/presentation_evaluation).*

- 2016 **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] Justyna Chromik[\*,+,!], Wouter de Vries[\*,#], Joey de Vries[+], Mark Wierbosch, and Jarmo van Lenthe[§].

[B.Sc. Degree] 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.*

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

## Conference Organizer

2016	<b>Shadow Technical Program Committee (TPC)</b> <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	<b>Technical Program Committee (TPC)</b> <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	<b>Local Organizing Committee</b> <i>IEEE Latin American Conference on Cloud Computing and Communications.</i>	LatinCloud
2010	<b>Local Organizing Committee</b> <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.*

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

## Rewards & Awards

2016	<b>Best Poster Presentation</b>	2nd Cyber Security Workshop in the Netherlands
2016	<b>ACM SIGCOMM Grant</b>	To attend the Internet Measurement Conference (IMC)
2016	<b>Student Travel Grant</b>	Conference on Network and Service Management (CNSM)
2015	<b>Invited to the Dagstuhl Seminar 16012</b>	on Global Measurements
2015	<b>Best Ph.D. 'Elevator Pitch' (1<sup>st</sup> Place)</b>	CTIT Symposium, University of Twente
2015	<b>Best Poster Presentation (3<sup>rd</sup> Place)</b>	CTIT Symposium, University of Twente
2015	<b>Best Paper Award</b>	Autonomous Infrastructure, Management and Security Conference
2010	<b>Student Award (3<sup>rd</sup> Place)</b>	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 Zambenedetti Granville, Aiko Pras  
*Journal of Information, Communication & Ethics in Society (JICES)* 15.1 (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, Daphner 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 Graul, 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 Zambenedetti 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

### Towards Validation of the Internet Census 2012

Dirk Maan, José Jair Santanna, Anna Sperotto, Pieter-Tjerk Boer  
*EUNICE/IFIP International Workshop (EUNICE)[acceptance 47.9%]*, 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 Zambenedetti 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 Zambenedetti Granville, Lucas Arbiza, Marcelo Marotta, José Jair Santanna  
*IEEE International Conference on Communications (ICC)[acceptance 37%]*, 2012