

# José Jair Santanna

Ph.D. Researcher, Lecturer, Network Security Specialist & (Big) Data Analyst

## Contact

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## Languages

portuguese native  
english fluency  
spanish comprehension  
dutch comprehension

## Programming

Bash, Python, C#, SQL  
PIG, Spark & Impala

## Professional Objective

I am currently a PhD candidate at University of Twente (ending in 2017) in a awesome research group called DACS. My research is founded by an European project focus in network of Excellence, called Flamingo, and funded by the Netherlands Organisation for Scientific Research in a project called D3.

I am interested in a research & development position with focus on network security and the use of big data technologies to improve network data analysis. A position where I can transfer my enthusiasm, knowledge, skills and experience into meaningful innovation that improve the security in computer networks, specially in the Internet.

## Education

- 2013–Now **Doctor** in Computer Science University of Twente, The Netherlands  
“*The DDoS as a Service Phenomenon*”.  
Supervisor: Prof. dr. ir. Aiko Pras
- 2010–2012 **Master** in Computer Science Federal University of Rio Grande do Sul, Brazil  
“*A BPM-based Solution for Inter-domain Circuit Management*”. The outcome of this work generated a product still in use by the Brazilian National Education and Research Network (RNP) (Link: <http://meican.cipo.rnp.br/>).  
Supervisor: Prof. dr. Lisandro Zambenedetti Granville
- 2005–2010 **Bachelor** in Computer Engineer Federal University of Pará, Brazil  
“*A Comparative Evaluation of DCCP Protocol in a Experimental Mesh Network*”.  
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 the following courses: Computer Networks, Computer Network Management, and Digital Systems.

### Guest Lecturer

2015 & 2016	<b>Product Design to Online Business (course)</b>	University of Twente, The Netherlands
	Audience: bachelor students of industrial engineering and business information technology.	
2015	<b>Network Security (course)</b>	University of Twente, The Netherlands
	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	<b>Cybercrime &amp; Cybersecurity (minor)</b>	University of Twente, The Netherlands
	Audience: bachelor students from University of Twente, European Research Center for Information (ERCIS), Westfälische Wilhelms - Universität Münster, Universität Innsbruck, and University of Leicester.	

## Software Developer

2015–Now	<b>Distributed Denial of Service Attacks Database (DDoSDB)</b>	
	Link: <a href="http://bit.ly/ddos_db">http://bit.ly/ddos_db</a>	
	An initiative to develop the largest open database with DDoS attacks.	
	Languages: Python, Bash, Pig Latin & Apache Impala	
2010–2011	<b>Management Environment of Inter-domain Circuits for Advanced Networks (MEICAN)</b>	
	Link: <a href="http://meican.cipo.rnp.br/">http://meican.cipo.rnp.br/</a>	
	Development of an Executable Network Management Policies Editor sponsored by the Brazilian National Education and Research Network (RNP).	
	Language: WS-BPEL	
2009	<b>Support for Planning Sustainable Electrical Power Generation via Vegetable Oil.</b>	
	Desktop application part of a Ph.D. thesis (chapter 5 and 6) sponsored by Eletronorte, subsidiary of the major Brazilian power utility (Eletrobrás).	
	Language: C#.Net & mySQL	

## Student Supervisor

[M.Sc. Degree]	<b>Joey de Vries [Cum Laude], Justyna Chromik [Cum Laude], Wouter de Vries, Mark Wierbosch, and Jarmo van Lenthe.</b>
[B.Sc. Degree]	<b>Roeland Krak, Max Kerckers, Dirk Maan, Jochum Börger, and Guilherme Dressler.</b>

## International Conference Reviewer

IFIP Networking (2014–2016), IEEE/IFIP Network Operations and Management Symposium (2014 & 2016), Asia-Pacific Network Operations and Management Symposium (2013 & 2014), IFIP/IEEE Integrated Management (2015), International Conference on Autonomous Infrastructure, Management and Security (2015), International Conference on Network and Service Management (2013–2015), EUNICE Conference (2013) & IEEE Symposium on Computers and Communications (2011).

## Awards

2015	<b>Best Ph.D. 'Elevator Pitch' (1<sup>st</sup> Place)</b>	CTIT Symposium, University of Twente
2015	<b>Best Poster (3<sup>rd</sup> Place)</b>	CTIT Symposium, University of Twente
2015	<b>Best Paper Award</b>	Autonomous Infrastructure, Management and Security Conference
2015	<b>Top Papers Nomination</b>	Brazilian Symposium on Computer Networks and Distributed Systems
2010	<b>Student Award (3<sup>rd</sup> Place)</b>	Computer Engineer, Federal University of Pará, Brazil

## **Presentations**

*More than 30 presentations in the last 3 years (available on my [slideshare.net/jjcsantanna](https://www.slideshare.net/jjcsantanna)), among those I highlight:*

- 2015 **Oral Presentation** at Logius (part of the Dutch Ministry of the Interior and Kingdom Relations).
- 2015 **Oral Presentation** to the Dutch National Management Organization of Internet Providers (NBIP).
- 2015 **Oral Presentation** to the Dutch National Cyber Security Centrum (NCSC).
- 2013 & 2015 **Oral Presentation** at the 31<sup>th</sup> and 36<sup>th</sup> IRTF Network Management Research Group (NMRG).

# Scientific Appendix

## Publications

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### DDoS 3.0 - How Terrorists Bring Down the Internet

Aiko Pras, José Jair Santanna, Jessica Steinberger, Anna Sperotto  
*International GI/ITG Conference, MMB & DFT*, 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)*, 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)*, 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)*, 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)*, 2015

### Characterisation of the Kelihos.B Botnet

Max Kerckers, José Jair Santanna, Anna Sperotto  
*International Conference on Autonomous Infrastructure, Management and Security (AIMS)*, 2014

### Towards Validation of the Internet Census 2012

Dirk Maan, José Jair Santanna, Anna Sperotto, Pieter-Tjerk Boer  
*EUNICE/IFIP International Workshop (EUNICE)*, 2014

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

José Jair Santanna, Anna Sperotto  
*International Conference on Autonomous Infrastructure, Management and Security (AIMS)*, 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)*, 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)*, 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)*, 2012