

# José Jair Santanna

Enthusiastic, Researcher, Lecturer, Network Security Specialist & (Big) Data Analyst

## Contact

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## Programming

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

## Links

<http://jairsantanna.com>



## Languages

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

## Professional Objective

I am currently a PhD candidate at University of Twente (till march 2017) in a research group called Design and Analysis of Communication Systems (DACS). My research is founded by the European commission via a project focus in network of excellence, called Flamingo; and by the Dutch national Organisation for Scientific Research (NWO) in a project called Distributed Denial of Service Defence (D3).

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

## Education

- 2013–mar/2017\* **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 Mesh Networks.”  
Supervisor: Dr. Kelvin Lopes Dias

## Experience

### 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: Digital Systems, Computer Networks, and Computer Network Management. The lectures included topics such as the core networking protocols (e.g., TCP/IP, BGP and DNS) and ISP management operations, tools and issues.

### 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*.

## Guest Lecturer

2016	<b>Network Management</b> Title: SNMPv1, v2, v3 and Beyond (a very practical lecture) Link: <a href="https://github.com/jjsantanna/lectures_hands_on/tree/master/20160517_SNMPv1_v2_v3">https://github.com/jjsantanna/lectures_hands_on/tree/master/20160517_SNMPv1_v2_v3</a> Audience: master students of computer science, electrical engineer, and telematics from the University of Twente.	University of Twente, The Netherlands
2015 & 2016	<b>Product Design to Online Business</b> Audience: bachelor students of industrial engineering and business information technology.	University of Twente, The Netherlands
2015	<b>Network Security</b> 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.	University of Twente, The Netherlands
2015	<b>Cybercrime &amp; Cybersecurity</b> Audience: bachelor students from University of Twente, European Research Center for Information (ERCIS), Westfälische Wilhelms - Universität Münster, Universität Innsbruck, and University of Leicester.	University of Twente, The Netherlands

## Student Supervisor

Among 10 supervised students: 5 decided to follow towards the next academic degree[\*], PhD or MSc, 2 received the MSc degree cum laude[+], 2 won the best paper award in international conferences[#], and 1 won the second place of a renowned Dutch national prize (KIVI/Defensie & Veiligheid) for her thesis[!].

[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**.

## International Conference Reviewer

Among more than 20 venues acting as reviewer we highlight four conferences which are the top well ranked related to the Committee on Network Operation and Management (CNOM), which is a renowned technical committee part of the IEEE Communications Society. For each conference we present the acronym, the full name, the acceptance rate which is the number of papers submitted divided by published\* (according [www.cs.ucsb.edu/~almeroth](http://www.cs.ucsb.edu/~almeroth)), and the h-index\* (according Google scholar). For the entire list of conference that I was reviewer you can check my records on the known conference management systems, i.e., EDAS [link], JEMS [link], and EasyChair [link].

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
NOMS	<b>IEEE/IFIP Network Operations and Management Symposium</b>	28.9%   22

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\*last checked: April 7, 2016

## Conference Organizer

- 2016 **Shadow Technical Program Committee (TPC)** CNSM  
IFIP/IEEE International Conference on Network and Service Management (CNSM) is the premier annual single-track conference in the general area of network and service management. A shadow TPC is a experimental initiative to make PhD researchers better TPCs in the future. The reviews are considered as normal a TPC review.
- 2013-2016 **Technical Program Committee (TPC)** ERRC  
Escola Regional de Redes de Computadores, a conference for undergrad students from the south of Brazil.
- 2012 **Local Organizing Committee** LatinCloud  
IEEE Latin American Conference on Cloud Computing and Communications
- 2010 **Local Organizing Committee** SBRC  
The Brazilian Symposium on Computer Networks and Distributed Systems.

## Software Developer

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

## Presentations

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

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

## Awards

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

# 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

### “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)*, 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 Kerkers, 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

### Redes de Rádios Cognitivos: Arquiteturas, Sensoriamento Espectral e Questões Regulatórias.

Rafael Kunst, Cristiano Both, Lucas Bondan, Maicon Kist, José Jair Santanna, Leonardo Faganello, Lisandro Granville, Juergen Rochol  
*Simpósio Brasileiro de Telecomunicações (SBrT)*. 2012

### 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