Arthur Jacobs | Curriculum Vitae

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Male, Brazilian citizen, born on 10/Sep/1992.

First year PhD student in Computer Science, in the Federal University of Rio Grande do Sul. Passionate about science and development, with strong will to learn about a multitude of subjects, and to build impacting and complex projects. Research interests include network management, Network Functions Virtualization, self-driving networks, programmable networks and artificial intelligence.

Education

- **PhD in Computer Science** — **August 2017 – June 2021 (Expected)**
  Federal University of Rio Grande do Sul — *Porto Alegre, RS — Brazil*
- **Study Abroad, Brazil Scientific Mobility Program** — **January 2014 – December 2014**
  University of Maryland — *College Park, MD — US*
- **BSc in Computer Science** — **March 2011 – December 2016**
  Federal University of Rio Grande do Sul — *Porto Alegre, RS — Brazil*

Research Experience

- **Doctoral Researcher** — **August 2017 – Current**
  Networks Lab, Federal University of Rio Grande do Sul — *Porto Alegre, RS — Brazil*
  - Worked under the supervision of Prof. Lisandro Z. Granville, researching network management topics, such as Network Functions Virtualization and Software Defined Networking.
  - Developed an affinity metric for Virtualized Network Functions, to identify and prevent performance degradations and resource contention in virtualized Service Function Chains.
  - Studied the use of artificial intelligence techniques, such as neural networks, to prevent misconfiguration of Virtualized Network Functions, based on the proposed affinity metric.
- **Undergraduate Researcher** — **August 2012 – May 2013**
  Networks Lab, Federal University of Rio Grande do Sul — *Porto Alegre, RS — Brazil*
  - Worked under the supervision of, then, PhD student Cristiano B. Both, in a joint project with company Datacom Inc., researching on using artificial intelligence to generate alarms for network operators.
  - Developed monitoring web platform using Java, and the Vaadin web framework.
  - Worked in a four-member team using agile methodology Scrum.
- **Undergraduate Researcher** — **August 2011 – August 2012**
  Networks Lab, Federal University of Rio Grande do Sul — *Porto Alegre, RS — Brazil*
  - Worked under the supervision of, then, PhD student Oscar M. Caicedo, researching on management on virtualized network using Mashup applications.
  - Investigated network virtualization background and related works on the research topic.
  - Built virtualized network testbed using Xen and Virtual Box, and aided in development of Javascript Mashup monitoring application.

Employment History

- **Software Developer** — **May 2016 – September 2017**
  ADP, LLC. — *Porto Alegre, RS — Brazil*
  - Acted as Software Architect on agile Discovery Teams, alongside a Development Leader and a Senior Product Owner, carrying out a leadership position in the development process.
  - Worked with several different Scrum teams, supporting the development of architected solutions, both in Progress 4GL and Java.
  - Worked closely with infrastructure teams, both in Brazil and Chile, to configure and manage execution environments of developed applications.

- **Software Developer Intern** — **September 2015 – May 2016**
  ADP, LLC. — *Porto Alegre, RS — Brazil*
  - Developed Java application to deploy ADP's database information for the government project eSocial, using Spring and SOAP web services.
  - Developed a web portal to monitor the deployment application's health.
  - Worked in a three-member team using agile methodology Scrum.

- **Software Developer Intern** — **May 2014 – August 2014**
  HCI Labs, University of Maryland — *College Park, MD — US*
  - Worked under the supervision of Prof. Mark Jacobs, in the Human-Computer Interactions labs of University of Maryland.
  - Developed Android version of the iOS app, Leafsnap, to identify trees and plants based on photos of leaves.
  - Ported the Objective-C APIs, used in Leafsnap for iOS, to Java.

Research Publications

Peer-Reviewed Conference Papers

- **A. S. Jacobs**, R. J. Pfitscher, R. L. dos Santos, M. F. Franco, E. J. Scheid and L. Z. Granville, "Artificial Neural Network Model to Predict Affinity for Virtual Network Functions", In *2018 IFIP/IEEE Network Operations and Management Symposium (NOMS)*, **To appear**, Taipei, Taiwan (2018).
- R. J. Pfitscher, E. J. Scheid, **A. S. Jacobs**, M. F. Franco, R. L. dos Santos, A. E. Schaeffer-Filho and L. Z. Granville, "A Model for Quantifying Performance Degradation in Virtual Network Function Service Chains", In *2018 IFIP/IEEE Network Operations and Management Symposium (NOMS)*, **To appear**, Taipei, Taiwan (2018).
- **A. S. Jacobs**, R. L. dos Santos, M. F. Franco, E. J. Scheid, R. J. Pfitscher and L. Z. Granville, "Affinity measurement for NFV-enabled networks: A criteria-based approach", In *2017 IFIP/IEEE Symposium on Integrated Network and Service Management (IM)*, pages 125-133, Lisbon, Portugal (2017).

Peer-reviewed Journal Articles

- O. M. C. Rendon, C. R. P. dos Santos, **A. S. Jacobs** and L. Z. Granville, "Monitoring Virtual Nodes using mashups", In *Computer Networks*, Volume 64, pages 55 - 70 (2014).

Posters, Workshops and Others

- **A. S. Jacobs**, R. L. dos Santos, M. F. Franco, E. J. Scheid, R. J. Pfitscher, L. Z. Granville, "AMNESiA: Affinity measurement platform for NFV-enabled networks", In *2017 IFIP/IEEE Symposium on Integrated Network and Service Management (IM)*, pages 899-900, Lisbon, Portugal (2017).

Technical skills

- **Programming Languages:** C, C++, C#, Java, JavaScript, HTML, CSS, Python, OCaml, Progress 4GL and SQL.
- **Tools and Frameworks:** Git, SVN and Mercurial; Hibernate and ORMLite; Maven and Gradle; Spring; Bootstrap, JQuery and Underscore; Node.js, AngularJS, Ionic and Django.
- **Databases:** Firebase, MongoDB, PostgreSQL, MySQL, Oracle and Progress.

Reference

- **Lisandro Zambenedetti Granville**
- Assoc. Professor of Computer Science
- Federal University of Rio Grande do Sul
- granvile@inf.ufrgs.br

Language skills

- **Portuguese:** native.
- **English:** fluent.
- **Spanish:** advanced.
- **German:** basic.