



Rudy Braquehais

Computer Scientist

Currently based in Fortaleza, Brazil

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Last updated: February 5, 2018

Personal Information

Full name	Rudy Matela Braquehais	Gender	Male
Nationality	Brazilian	Year of Birth	1987

Summary

I am a Computer Scientist with over 10 years of experience in both software industry and academia. In industry, I worked developing web applications, mobile applications, networking systems and embedded systems. In academia, I worked on the topic of property-based testing of functional (Haskell) programs and published a few research papers. At the time of compiling this CV, I am looking for positions in either industry or academia.

Education

2014–2017	PhD in Computer Science , <i>University of York</i> , United Kingdom. Award letter received; waiting for graduation.
2009–2011	Master of Computer Science , <i>Universidade Estadual do Ceará</i> , Brazil.
2005–2009	Bachelor of Computer Science , <i>Universidade Estadual do Ceará</i> , Brazil.

Skills

Programming	Haskell, C, Bash, Ruby, C#, JavaScript, Lisp, Java, Assembly, C++, Python
Markup/Other	LaTeX, HTML, CSS, Markdown, LilyPond, txt2tags, VHDL, Verilog, SQL
Libs./Frmwrks.	Ruby on Rails, Android SDK, Windows Driver Kit, SDL
OS	Linux System Administration (Ubuntu, Debian, Arch): dpkg, apt, pacman
SCM	Git, Mercurial, SVN
Fields of Interest	Functional Programming Languages, Property-based Testing, Data Structures, Algorithm Design, Computer Networking, Programming

Languages

Portuguese	Native Language	French	Basic
English	Fluent	Spanish	Basic

Previous Roles and Experience

Software Industry

- 2012–2013 **Project Manager**, *FFIT*, Brazil. ffit.com.br
Development of web and mobile applications in the field of health care.
 - Technologies: Ruby on Rails, Android, Kannel SMS Gateway and C.
 - Management of a small development team using agile methodologies (Scrum).
- 2011–2012 **Software Engineer**, *Atlântico Institute*, Brazil. atlantico.com.br
Development of printers drivers to interface with Windows Azure
 - Technologies: C++, C#, WDK, DDK, Windows Azure.
 - Experience in a workplace with CMMI 5 and ISO 9001 certification.
- 2008–2010 **Software Engineer and Project Manager**, *IEPRO*, Brazil. iepro.org.br
Implementation of network protocols using Assembly and C on the EZChip NP-3.
- 2008 **Programmer**, *Atlântico Institute*, Brazil. atlantico.com.br
Development of web applications using Ruby on Rails (and Scrum/Agile).
- 2008 **Programmer**, *Secretary of Education*, Brazil. www.seduc.ce.gov.br
Development of educational software using C, Agar and SDL.

Academia

- 2014–2017 **Teaching Assistant**, *University of York*, United Kingdom. cs.york.ac.uk
Marking and practical sessions with undergraduate students. Modules:
 - Mathematical Foundations in Computer Science;
 - Computability and Complexity;
 - Implementation of Programming Languages;
 - Systems Software and Compilers.
- 2012 **Lecturer**, *Faculdade Lourenço Filho*, Brazil. www.flf.edu.br
Teaching for the Computer Networks Technologist Undergraduate Course. Modules:
 - Network Services and Application Protocols;
 - Programming for Networks.
- 2011 **Researcher**, *Université du Québec à Montréal (UQAM)*, Canada. uqam.ca
Research & development in the field of high speed network devices and mechanisms.
 - Implementation of protocols in C and Assembly for the EZchip NP-4 Platform.
- 2009 **Lecturer**, *Universidade Estadual do Ceará (UECE)*, Brazil. www.uece.br
Lecturing for the Introduction to Informatics module.
- 2006 **Teacher**, *Farias Brito High School*, Brazil. www.fariasbrito.com.br
Teaching in a preparatory course to the International Olympiad in Informatics (IOI)
- 2005–2008 **Researcher**, *Universidade Estadual do Ceará*, Brazil. www.uece.br
Research and development in the field of networking systems (C and VHDL).

Open Source Contributions

- 2017 Extrapolate: a library to generalize counter-examples of Haskell test properties
hackage.haskell.org/package/extrapolate
- 2016–2017 Speculate: a tool to discover properties about Haskell functions
hackage.haskell.org/package/speculate
- 2015–2017 FitSpec: a tool to refine test properties for Haskell programs
hackage.haskell.org/package/fitspec
- 2015–2017 LeanCheck: an enumerative property-based testing library for Haskell
hackage.haskell.org/package/leancheck
- 2017–2017 Tankode: a programming action game github.com/rudymatela/tankode
- 2007–now Maintainer of several Arch Linux packages on the AUR aur.archlinux.org
- 2012–2015 evenmoreutils: command line tools github.com/rudymatela/evenmoreutils
- 2013 BitBurn: a burndown chart generator that feeds from BitBucket issue trackers (implemented in Ruby).
bitbucket.org/ffit/bitburn

Bugfixes and improvements

- 2012–2013 Bug fixes and improvements in the Hgactivity plugin for Mercurial
- 2012 Bug corrections on the Kannel SMS Gateway kannel.org
- 2011 Bug fix on the screen rotation support of DWM dwm.suckless.org

Awards (programming contests)

- 2009 Participant of the ACM-ICPC World Finals at Stockholm icpc.baylor.edu
- 2008 Silver Medalist on the ACM-ICPC Brazil Finals maratona.ime.usp.br
- 2007 Bronze Medalist on the ACM-ICPC Brazil Finals maratona.ime.usp.br
- 2003–2005 Three times gold medalist of IOI's Brazilian Phase ioinformatics.org

Publications

- PhD Thesis Rudy Braquehais. 2017. Tools for Discovery, Refinement and Generalization of Functional Properties by Enumerative Testing. University of York, UK.
- IFL 2017 Rudy Braquehais and Colin Runciman. 2017. Extrapolate: generalizing counterexamples of functional test properties. In *IFL 2017* (draft proceedings).
matela.com.br/paper/extrapolate.pdf
- Haskell'17 Rudy Braquehais and Colin Runciman. 2017. Speculate: discovering conditional equations and inequalities about black-box functions by reasoning from test results. In *Haskell'17*, ACM. matela.com.br/paper/speculate.pdf
- Haskell'16 Rudy Braquehais and Colin Runciman. 2016. FitSpec: refining property sets for functional testing. In *Haskell'16*, ACM. matela.com.br/paper/fitspec.pdf