

# Rudy Matela

Computer Scientist

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## Personal Information

Full name Rudy Matela Braquehais  
Nationalities Brazilian & Polish      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.

## Education

2014–2017 **PhD in Computer Science**, *University of York*, United Kingdom.  
2009–2011 **Master of Computer Science**, *Universidade Estadual do Ceará*, Brazil.  
2005–2009 **Bachelor of Computer Science**, *Universidade Estadual do Ceará*, 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, Programming, Algorithm Design, Computer Networking

## Languages

Portuguese	Native Language	French	Basic
English	Fluent	Spanish	Basic
Polish	Learning		

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## Previous Roles and Experience

### Software Industry

- 2018 **Computer Scientist**, *Self-employed*.  
Independent contractor providing services for Stack Builders (USA).
  - Technologies: Haskell, Yesod, Snap, SQL, JavaScript and Bash
- 2012–2013 **Project Manager**, *FFIT*, Brazil. [ffit.com.br](http://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](http://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](http://iepro.org.br)  
Implementation of network protocols using Assembly and C on the EZChip NP-3.
- 2008 **Programmer**, *Atlântico Institute*, Brazil. [atlantico.com.br](http://atlantico.com.br)  
Development of web applications using Ruby on Rails (and Scrum/Agile).

### Academia

- 2014–2017 **Teaching Assistant**, *University of York*, United Kingdom. [cs.york.ac.uk](http://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](http://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](http://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](http://www.uece.br)  
Lecturing for the Introduction to Informatics module.
- 2005–2008 **Researcher**, *Universidade Estadual do Ceará*, Brazil. [www.uece.br](http://www.uece.br)  
Research and development in the field of networking systems (C and VHDL).

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## Open Source Contributions

- 2017 Extrapolate: a library to generalize counter-examples of Haskell test properties  
[hackage.haskell.org/package/extrapolate](http://hackage.haskell.org/package/extrapolate)
- 2016–2017 Speculate: a tool to discover properties about Haskell functions  
[hackage.haskell.org/package/speculate](http://hackage.haskell.org/package/speculate)
- 2015–2017 FitSpec: a tool to refine test properties for Haskell programs  
[hackage.haskell.org/package/fitspec](http://hackage.haskell.org/package/fitspec)
- 2015–2017 LeanCheck: an enumerative property-based testing library for Haskell  
[hackage.haskell.org/package/leancheck](http://hackage.haskell.org/package/leancheck)
- 2017–2017 Tankode: a programming action game [github.com/rudymatela/tankode](https://github.com/rudymatela/tankode)
- 2007–now Maintainer of several Arch Linux packages on the AUR [aur.archlinux.org](http://aur.archlinux.org)
- 2012–2015 evenmoreutils: command line tools [github.com/rudymatela/evenmoreutils](https://github.com/rudymatela/evenmoreutils)
- 2013 BitBurn: a burndown chart generator that feeds from BitBucket issue trackers (implemented in Ruby).  
[bitbucket.org/ffit/bitburn](http://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](http://kannel.org)
- 2011 Bug fix on the screen rotation support of DWM [dwm.suckless.org](http://dwm.suckless.org)

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## Awards (programming contests)

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

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## Recent Publications

- PhD Thesis 2017. Tools for Discovery, Refinement and Generalization of Functional Properties by Enumerative Testing. University of York, UK.  
[matela.com.br/paper/rudy-phd-thesis-2017.pdf](http://matela.com.br/paper/rudy-phd-thesis-2017.pdf)
- IFL 2017 Extrapolate: generalizing counterexamples of functional test properties.  
[matela.com.br/paper/extrapolate.pdf](http://matela.com.br/paper/extrapolate.pdf)
- Haskell'17 Speculate: discovering conditional equations and inequalities about black-box functions by reasoning from test results. [matela.com.br/paper/speculate.pdf](http://matela.com.br/paper/speculate.pdf)
- Haskell'16 FitSpec: refining property sets for functional testing.  
[matela.com.br/paper/fitspec.pdf](http://matela.com.br/paper/fitspec.pdf)