

# Igor Duarte Cardoso

## Basic Data

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Degree: Master of Science in Computer and Telematics Engineering  
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## Objectives

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My short-term objectives are to keep working on the fields of Cloud Computing (IaaS), Network Virtualization and Network Functions Virtualization against projects like OpenStack, OpenDaylight, Open vSwitch and OPNFV, primarily as a Software Engineer, eventually doing research as well.

I want to take part in the evolution of existing (and development of new) telecommunication technologies and core systems, learning and improving day after day.

## Education

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- 2014 Master of Science in Computer and Telematics Engineering,  
**Universidade de Aveiro**, Aveiro, Portugal,  
Dissertation: “Network Infrastructure Control for Virtual Campus”,  
Integrated Master’s includes both Bachelor’s and Master’s degrees:  
Degree with a broad Computer Science foundation and multiple practical projects.  
*Final grade: 16 out of 20.*
- 2008 High School,  
**Agrupamento de Escolas da Guia**, Guia, Portugal:  
*Final grade: 18 out of 20.*

## Master’s Dissertation

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On my Master’s Dissertation I have designed and developed an extension for OpenStack Neutron that allows virtually any computer network to be extended beyond their physical boundaries up to a Cloud-managed network, per a Cloud tenant’s request. This is achieved through an architecture that uses pluggable drivers to communicate with remote devices that directly connect or manage these computer networks, automating all the process of reconfiguring them in order to extend their managed networks’ broadcast domains up to the Cloud infrastructure (usually via some form of tunneling). Examples of use cases that can be satisfied or made easier are: a) incrementally migrating legacy computer networks to the cloud; b) achieving the notion of a virtual campus, composed by multiple heterogeneous devices managed by the Cloud tenant or administrator, with virtual services deployed on top; c) on NFV, migrating current physical home gateways to a virtual home gateway environment, without replacing the customer’s home gateway itself. Other use cases and in-depth coverage can be read on my publication: “Seamless integration of Cloud and Fog networks”, referenced at the [Publications](#) section.

## Scholarships and Certificates and Awards

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- 2014 Contribution to the extra-curricular mobile Android app ActUA
- 2013 First place on a University's Mobile App Development challenge awarded by Blip.pt
- 2011 Research Integration Scholarship (12-month) at IEETA, financed by FCT
- 2008 Top High School finalist.

## Computer Skills

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- Basic Experience: OpenDaylight, OpenFlow, Ruby, C, C++, ASP.NET, PHP, JavaScript, Objective-C, iOS, bison, MIPS assembly, x86 assembly, Dansguardian, Squid3, Jekyll
- Intermediate Experience: OpenStack, Java, git, Python, bash, Open vSwitch, OpenWrt, Android, C#, SQL, HTML, Cisco IOS, GNU/Linux, Vim,  $\LaTeX$ , Jenkins, GlassFish, GNS3, UML, Excel

## Work Experience

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|--------------------------------|---|
| <i>Current</i><br>October 2014 | <b>Researcher and Software Engineer</b><br>Instituto de Telecomunicações  |
|                                | Given the experience I acquired on OpenStack during my Master's Dissertation and the related work I did during it, I was invited to stay at Instituto de Telecomunicações doing research related to Network Functions Virtualization (NFV). There, I kept working on OpenStack although initially not upstream. Then started making contributions to the Group-Based Policy project for OpenStack. Most of my work, though, has been around other aspects of NFV: automating configuration of Virtual Network Functions (VNFs), improving and discussing the Traffic Steering implementation to meet the purposes of Service Function Chaining (SFC), testing and integrating other implementation artifacts of the team. |
| <i>Current</i><br>May 2013     | <b>Developer, Designer and Marketeer</b><br>Wrkout  |
|                                | Not really a job, but an amazing work experience. Wrkout is a mobile Android app which I've created. By dealing with multiple aspects related to developing, publishing and monetizing the app by myself, I have learned plenty. This project turned product also teaches me exactly why I should be working in a team.   |

## Languages

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- English: Fluent
- Portuguese: Mother tongue
- Spanish: Basic Understanding

## Interests and Activities

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Network Virtualization  
Software  
Software-Defined Networking  
Cloud Computing  
OpenStack  
GNU/Linux  
Open-Source  
Technology, Gadgets  
Brainstorming

## Publications

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- 2015 Cardoso, I., Barraca, J. P., Goncalves, C., Aguiar, R. L.:  
“Seamless integration of Cloud and Fog networks”.  
1st IEEE Conference on Network Softwarization (NetSoft 2015).
- 2014 Paulo Dias, Tiago Sousa, Joao Parracho, Igor Cardoso, Andre Monteiro, Beatriz Sousa Santos:  
“Student Projects Involving Novel Interaction with Large Displays”.  
IEEE Computer Graphics and Applications, vol. 34, no. 2, pp. 80-86, Mar.-Apr., 2014.
- 2014 Tiago Sousa, Igor Cardoso, João Parracho, Paulo Dias, Beatriz Sousa Santos:  
“DETI-Interact: Interaction with Large Displays in Public Spaces Using the Kinect”.  
HCI 2014 - 16th International Conference on Human-Computer Interaction: 196-206.
- 2012 Cardoso, I., Dias, P., Sousa Santos, B.:  
“Interaction with large displays in a public space using the Kinect sensor”.  
20 Encontro português de Computação Gráfica - EPCG 2012, pp. 81-88 (2012).

## Contributions

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I have made upstream contributions to the Group-Based Policy project for OpenStack and the OpenStack Operations Guide. I have made other contributions to Open-Source software that are public but not all of them upstream, including irssi, Yakuake and OpenStack. I have also developed other simple side projects in the past, some of them available at my GitHub. I have also made local contributions in the context of GLUA.

## Presence

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ATNoG	Advanced Telecommunications and Networks Group
September 2013	I became associated with ATNoG as part of my Master's Thesis. This group is established inside Aveiro's pole of Instituto de Telecomunicações.
GLUA	University of Aveiro's Linux Group
July 2011	Member of the University of Aveiro's Linux Group (Grupo Linux da Universidade de Aveiro).

## Events

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As an attendee and meeting participant	OpenStack Summit 2015, Vancouver
As an attendee	OpenStack Summit 2014, Paris
As different roles	Other events, conferences and challenges less related.