

# Europass Curriculum Vitae

## Personal information

Surname(s) / First name(s)

Address(es)

Telephone(s)

Email(s)

Homepage

Nationality(-ies)

Date of birth

Gender

**Abrantes, Filipe**

Rua Fernão Magalhães 25, 4400-629 Vila Nova de Gaia, Portugal

(+351)917786474

filipe.abrantes@gmail.com

<http://abrantix.org/>

Portugal

9<sup>th</sup> June 1981

Male

## Occupational field

**Android Developer, Telecommunications Engineer**

## Work experience

Dates

June 2008 - Current

Occupation or position held

Researcher

Main activities and responsibilities

Develop and coordinate research and development activities in the areas of Autonomous Computing and Mobile Applications.

Name and address of employer

Fraunhofer Portugal (AICOS)

Type of business or sector

R&D

Dates

Oct. 2004 - May 2008

Occupation or position held

Junior Researcher

Main activities and responsibilities

Developed research and development activities in IST EU projects and internal projects. He was also responsible for the supervision of *Licenciatura* and Master Students.

Name and address of employer

INESC Porto

Type of business or sector

R&D

Dates

Fall 2005

Occupation or position held

Assistant Professor

Main activities and responsibilities

Taught laboratory classes of Data Communications and Computer Networks in the courses of Electrical and Computer Engineering and Informatics Engineering. Occasionally, he also teaches laboratory courses of Mobile Communications on the topic of Ad-Hoc routing.

Name and address of employer

Faculty of Engineering of University of Porto (FEUP)

Type of business or sector

Education

Dates

Feb. 2004 - July 2004

Occupation or position held

Internship

Main activities and responsibilities

Development of the final project of the *Licenciatura* degree. Classification of 19 out of 20.

Name and address of employer

INESC Porto

Type of business or sector

Telecommunications and Multimedia R&D

## Education and training

Dates  
 Title of qualification awarded  
 Principal subjects/Occupational skills covered  
 Name and type of organization providing education and training  
 Level in national or international classification

Oct. 2004 - July 2009  
 PhD in Electrical and Computer Engineering.  
 Thesis Title: *Explicit Congestion Control Algorithms for Time-Varying Capacity Media*.  
 Faculdade de Engenharia da Universidade do Porto.

Dates  
 Title of qualification awarded  
 Principal subjects/Occupational skills covered  
 Name and type of organization providing education and training  
 Level in national or international classification

Sep. 1999 - July 2004  
*Licenciatura* in Electrical and Computer Engineering.  
 Telecommunications specialty.  
 Faculdade de Engenharia da Universidade do Porto.

16.2 out of 20

Dates  
 Title of qualification awarded  
 Principal subjects/Occupational skills covered  
 Name and type of organization providing education and training  
 Level in national or international classification

July 1999  
 High School graduation.  
 Specifics in Math and Physics.  
 Escola Secundária António Sérgio.

17.3 out of 20

## Personal skills and competences

Mother tongue(s)

Other language(s)

*Self-assessment  
 European level<sup>(\*)</sup>*

**English**

**Spanish**

**French**

**Italian**

Organisational skills and competences

## Portuguese

English, French, Spanish, Italian

Understanding		Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production	
C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user
B1	Independent user	B2	Independent user	B1	Independent user	B1	Independent user
A2	Basic user	A2	Basic user	A2	Basic user	A2	Basic user
A1	Basic user	A2	Basic user	A1	Basic user	A1	Basic user

<sup>(\*)</sup> Common European Framework of Reference (CEF) level

Was involved in the organization of the 1<sup>st</sup> Meeting of Young Researchers of the University of Porto.

## Technical skills and competences

Excellent knowledge of the Android platform at the application level. Extensive experience in managing Activity and Service lifecycles, Intents and custom drawing both with Canvas and OpenGL ES. Familiar with the impact that Garbage Collection and several other Android-specific issues have on the overall user experience. Excellent knowledge of IP technology from the Medium Access layer up, with emphasis on the topics of congestion control and traffic engineering, and on transport, mobile routing and medium access protocols. Good technical writing skills. Good simulation and modeling skills. Ability to conduct independent self-motivated work as well as to participate in large-scale projects with multiple partners. Comfortable at giving public presentations. Familiar with the following transmission technologies: IEEE 802.11abg, IEEE 802.3, IEEE 802.16, Bluetooth, and also familiar with most network protocols such as MPLS, IPv4/6, IPsec, PPTP/PPP, OSPF, OLSR, AODV, SIP, HIP and with most existing transport protocols (TCP, UDP, DCCP, SCTP, ...) and service protocols (HTTP, DNS, DHCP, LDAP, UPnP, ...).

## Computer skills and competences

Broad experience with C/C++ at both kernel and high level programming. 2 years of active Java development using Android APIs. Advanced user of Linux OS, Windows OS, MAC OSX and familiar with UNIX systems such as FreeBSD. Familiar also with the software development cycle and with collaborative development tools. Experienced in embedded software development. Decent knowledge of the following languages: Perl, TCL, bash scripting, C# and .NET framework, PHP, HTML, SQL, Javascript, web APIs (Google Maps, GeoIP, ...). Knowledge of the following application software: Network Simulator 2, MATLAB/Simulink, Mathematica, Apache (HTTP), Bind (DNS), Squid, OpenLDAP, DHCP, MySQL/Postgres, Samba, Qmail, LaTeX, OpenOffice, Microsoft Office, Google Docs.

## Driving licence(s)

B-Category license valid until 2046.

## Additional information

References: Manuel Ricardo and José Ruela from INESC Porto.

### Publications

Filipe Abrantes, João Taveira Araújo, and Manuel Ricardo.  
Explicit Congestion Control Algorithms for Time-Varying Capacity Media.  
*to appear (IEEE Transactions on Mobile Computing)*, 2010

Filipe Abrantes, João Taveira Araújo, and Manuel Ricardo.  
Flash Crowd Effect in RCP.  
*6th International Workshop on Protocols for FAST Long-Distance Networks (PFLD-Net)*, March 2008

Filipe Abrantes and Manuel Ricardo.  
A Simulation Study of XCP-b Performance in Wireless Multi-Hop Networks.  
*3rd ACM Workshop on Quality of Service and Security for Wireless Networks (Q2SWinet)*, October 2007

Filipe Abrantes and Manuel Ricardo.  
*XCP for Shared-Access Multi-Rate Media*.  
ACM SIGCOMM Computer Communication Review, July 2006

Filipe Abrantes and Manuel Ricardo.  
On Congestion Control for Interactive Applications in Dynamic Heterogeneous 4G Networks.  
*16th IEEE International Symposium on Personal, Indoor, and Mobile Radio communications (PIMRC)*, September 2005

### Personal interests

I enjoy traveling as much as possible; playing soccer, cycling and photography preferred hobbies. Occasionally I also play the Wii – I have been making steady progress in Guitar/Band Hero drumming.

## Annexes

### Projects

Name	<sup>3</sup> (2010)
Work Description	<sup>3</sup> is his current Android project. It is an experimental app that takes Rock'on's idea of exploring different different browsing methods for one's music library a little further. <sup>3</sup> has currently (May 2010) over 100k downloads and over 50k active installs. <sup>3</sup> is free and open source. <sup>3</sup> helped him develop knowledge in OpenGL ES, as well as a deep understanding of Android internals.
Name	Mover (2009)
Work Description	He was part of the team that developed Mover, a accelerometer-based activity monitoring and fall-detection application for Android phones. It was submitted to the Android Developer Challenge 2 and ranked 5th in the Lifestyle category.
Name	Rock'on Music Player for Android (2009)
Work Description	His first public Android application. It explored an alternative browsing method for music libraries based on album art. The application was free and open source but it has since been discontinued.
Name	Explicit Congestion Control Algorithms for Capacity Varying Media (2005-2008)
Work Description	This is the research topic of his PhD thesis. During this project he has developed excellent network simulation skills, and system modeling abilities. He also developed his knowledge in the field of control theory. Finally, it helped him understand the process required to conduct successful research.
Name	Integration of XCP and IPsec (2007-current)
Work Description	This project involved modifications to the FreeBSD kernel so that XCP could be used with IPsec. He was responsible for the supervision of the project in which 2 Masters students have participated.
Name	WiMetroNet (2006-2008)
Work Description	WiMetroNet is an internal project of INESC Porto which objective is to develop a networking architecture for mobile metropolitan networks (i.e. to be used by Public Transportation Services). In this project he has been involved in the development of Layer 2 congestion control mechanisms, and on the development of mobility models of the Public Transportation System of Porto.
Name	Ambient Networks (2006-2007)
Work Description	Ambient Networks was an IST EU project focused on the design of networking architectures and mechanisms that facilitate ubiquitous and seamless communication. It included partners such as Ericsson, Nokia, NEC, BT or Telefonica. During this project he has worked on the implementation of a modified kernel-level socket API for FreeBSD and on novel congestion control approaches. He participated in the writing of four project deliverables and attended and organized several project meetings.
Name	Session and Terminal Mobility: Approaches and Experiments (2006)
Work Description	This project was about experimenting and evaluating the mobility characteristics of the HIP and the SIP protocols. He was responsible for the supervision of the project in which one <i>Licenciatura</i> student was involved.
Name	Daidalos (2004-2005)
Work Description	Daidalos was an IST EU project which goal was to develop next generation operator networks. During this project he has worked on the integration of ad-hoc and infrastructure operator networks. He developed a Linux kernel module for an implementation of the AODV routing protocol, and also evaluated several algorithms through simulation. He participated in the writing of one project deliverable.

Name	Autonomous Wireless Mesh Networks (2005)
Work Description	Consisted in the development of a prototype of a wireless mesh network built with low cost wireless routers, powered by solar panels. He was responsible for the supervision of the project in which have participated 2 <i>Licenciatura</i> students.
Name	X-Fetch (2005)
Work Description	X-Fetch was an urban game developed by students of the Universidade Católica,. The Aml concept was applied to the game to improve the interaction of players between the real and the virtual worlds of the game. He has participated in the actual deployment of the game which was played in the city of Porto, twice.
Name	Aml (2004)
Work Description	The Ambient Intelligence (Aml) project was developed as part of his internship at IN-ESC Porto and also as part of the final project of his Licenciatura degree. During this project he has acquired knowledge mostly in the field of ad-hoc routing and flooding techniques. The project also involved software development for embedded systems, proximity detection using the Bluetooth technology, and service discovery protocols.