

Alexandre Lopes

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Personal

Date of birth 14 of June 1987
Citizenship Portuguese (EU)

Experience

16 Nov '16 – present **Systems and Software Architect**, *Carl Zeiss SMT GmbH*, Oberkochen, Germany.

- Work package leader for high-NA EUV control system
- Architect for the new control system for high-NA EUV in-house control system
- Setting up the necessary toolchains, hardware, documentation and development environment for ARM Cortex-A and ARM Cortex-M based-development
- ARM Cortex-A and M based software development
- Parallel computing image processing

01 Sep '16 – 15 Nov '16 **Embedded Software Architect**, *Robert Bosch Automotive Steering GmbH*, Schwäbisch Gmünd, Germany.

- Embedded software architecture and development for the new ServoTwin steering system platform (commercial vehicles)
- Helped two task forces achieve their goal

Jan. 2015 – Present **Embedded systems developer, System administrator, R&D Engineer**, *Carl Zeiss SMT GmbH (outsourced by Personality IT Stuttgart)*, Oberkochen, Germany.

- Software development for the ARM Cortex A9 / Altera Cyclone V (GNU/Linux and baremetal)
- Implementation of real-time frameworks (Xenomai, Preempt-RT, RTAI for ARM and x86)
- Mechatronic systems R&D (incl. test and project planning and analysis of opto-electrical measurements)
- GNU/Linux user and kernel space software development
- GNU/Linux (Debian based) and Solaris sysadmin.

2012 – 2014 **System Administrator**, *University of Freiburg*, Freiburg, Germany.

Implementation and management of, among other, the following server side solutions:

- Linux, Apache, MySQL, PHP (LAMPS)
- Wiki (using MediaWiki)

2012 – 2014 **Teaching Assistant**, *University of Freiburg*, Freiburg, Germany.

2010 – 2011 **Researcher**, *Theory of Condensed Matter - IMM, Radboud University Nijmegen*, The Netherlands.

Academic Background

2012 – 2015 **PhD in Theoretical Physics**, *University of Freiburg*, Germany.

- Thesis' title: *Pure univariate quantum marginals and electronic transport properties of geometrically frustrated systems*

2005 – 2010 **Bachelor and Master in Physics**, *University of Aveiro*, Portugal, *Grade: 18/20 (First Class Honours)*.

- Top ranked student and awarded "Best student '08" prize

Education and Training

2010 **Trainee**, *Hewlett-Packard (HP) University*, Paço de Arcos, Portugal.

Training in:

- HP technology
- Markets
- Presentation techniques
- Sales and Negotiation

2005 – 2010 **Music Student**, *Conservatory of Music of Aveiro - Calouste Gulbenkian*, Portugal.

2006 **Participant**, *1st International Science Summer Camp '06*, Uppsala, Sweden.

- Energy and the Environment

2005 **Intern**, *Rutherford's Experiment*, Portuguese Nuclear and Technological Institute (ITN), Sacavém, Portugal.

- Analysis of zinc implanted sapphire using *Rutherford Backscattering Spectroscopy*

2003/2004/2005 **Intern**, *Experimental Holography*, Department of Physics, University of Aveiro, Portugal.

- Reflexion and transmission holography, multi-exposure holography, single and double beam set-ups and other

Awards and Scholarships

2010 – Present **Doctoral scholarship (BD)**, *Fundação para a Ciência e a Tecnologia*, Portugal.

2013 **Funding for conference participation**, *Wilhelm und Else Heraeus-Stiftung*, Germany.

2010 **Scientific initiation scholarship (BIC)**, *Department of Physics, University of Aveiro*, Portugal.

- Numerical and analytical study of magnetic and transport phenomena in low dimensional electronic systems with strong correlations

2008 – 2009 **Scientific initiation scholarship (BIC)**, *Department of Physics, University of Aveiro*, Portugal.

- Initiation to the characterization and manipulation of nanostructures using AFM and NSOM

2008 **Best Student '08**, *Department of Physics, University of Aveiro*, Portugal.

2005 **Award**, *17th European Union Contest for Young Scientists*, Bauman University, Moscow, Russia.

Languages

Levels based on the *Common European Framework of Reference for Languages*

Portuguese	Mother Tongue
English	C2 (near-native)
German	B2
Spanish	B2

2010 **Academic IELTS exam**, Overall grade: 8.0.

Computer skills

Programming Languages Assembly (ARM), Bash shell scripting, Fortran, C/C++, JavaScript, Matlab, PHP, Python

Parallel Programming	Apache Storm, CUDA, OpenCL, OpenMP, OpenMPI
Programming Tools	Doxygen, Eclipse, GNU Toolchain, UML, Visual Studio
Markup Languages	CSS, HTML, \LaTeX , XHTML
Operating systems	GNU/Linux, Microsoft Windows, Solaris
Other	CORBA IDL, Inkscape, Git, Mathematica, Subversion, Vim, VHDL, Yocto Project

Other

- 2014 Creator and developer of CometZ, an open source video game
- 2011–14 Author of 5 scientific articles
- May 2006 European driver's license, category B