

Henrique M. P. Cabral

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Education

Sep 2009—present **Master in Electrical and Computer Engineering**, *Faculty of Engineering of the University of Porto*, Porto, Portugal, GPA 18.0/20.

Expected graduation date: August 2014.

- Major in Telecommunications; Microelectronics and Embedded Systems track.
- *Prémio Incentivo* for four best 1st year engineering students (one in 1500) — 2011
- Merit Scholarship for twelve best engineering students (one in 500) — 2012

Sep 2006— **Secondary school**, *Colégio Luso-Francês*, Porto, Portugal, GPA 18.7/20.

Jul 2009 Science and technology track.

- Honors diploma for results in Physics and Mathematics Olympiads.

Professional experience and research

Nov 2009—present **Student researcher**, *FASt—FEUP Autonomous Sailboat*, FEUP/INESC, Portugal.

Research in autonomous sailboats for scientific and defense applications.

- Redesign and development of onboard data logging system.
- Architecture and implementation of mission planning language.
- Participation in the 5th and 6th World Robotic Sailing Championships.

Apr 2011—present **Student researcher**, *Carebox project*, FEUP, Portugal.

Design, implementation, and evaluation of an automobile black box for insurance purposes.

- Team composed of electrical engineering, economics, and information science students.
- Implementation of low-level sensor drivers and internal data logging system.
- Design and assembly of main printed circuit board.

Sep—Dec 2013 **Undergraduate teaching assistant**, *FEUP*, Porto, Portugal.

Teaching laboratory classes on computer networking to informatics and computing engineering students. Evaluating and grading assignments and lab reports.

Summer 2012 **Product development consultant**, *Freelance*, Porto, Portugal.

Embedded audio platform for IT start-up for South American market.

- Multidisciplinary team in Portugal and Chile.
- Two months from specification to working product to secure VC investment.

Nov 2010—2012 **Fellow**, *Novos Talentos em Matemática*, Calouste Gulbenkian Foundation, Portugal.

Mathematics research programme for undergraduate students. Research in geometry, number theory, elliptic curves and functional analysis.

Publications

- [1] H. M. P. Cabral et al., “MPL—A Mission Planning Language for Autonomous Surface Vehicles,” in *Robotic Sailing 2013*, Brest, France, 2013, pp. 137-148.
- [2] A. Silva et al., “Measuring underwater noise with high endurance surface and underwater autonomous vehicles,” in *OCEANS 2013*, San Diego, CA, 2013, to be published.

Skills

- Languages** Portuguese (native language), English (fluent), Spanish (professional proficiency), French (limited proficiency)
- Coding** C, C++, Java, Lua, bash, Verilog HDL, MATLAB
- OS** Linux (Debian, Fedora, embedded), Microsoft Windows (XP, 7.0)
- Software** vim, git, \LaTeX 2 ϵ , MATLAB, CadSoft EAGLE
- Platforms** PIC 16/32MX, ARM Cortex-M4, Xilinx Spartan 3/3E/6, Xilinx Microblaze

Awards and achievements

- Sep 2013** **Best Student Team**, *6th World Robotic Sailing Championship*, Brest, France.
Together with the École Navale prize for 1st place in endurance race with two boats. Tasks involving speed, endurance, sensing, and high-level behaviours.
- Sep 2012** **1st place**, *5th World Robotic Sailing Championship*, Cardiff, Wales, UK.
 - First place in Microtransat class and general ranking.
 - Winners of Hacker Challenge together with German team (building an autonomous sail-boat in one week with assorted materials).
- Aug 2009** **Bronze medal**, *40th International Physics Olympiad*, Mérida, Yucatán, Mexico.
Best theoretical examination score in bronze tier and best result in Portuguese team.

Extracurricular activities

- Jul–Aug 2013** **Trainee**, *Universidade Itinerante do Mar*, Portugal/Spain.
Twelve days aboard the training ship *Creoula* with mixed Navy and student crew.
 - 140 h and 700 M of navigation.
 - Performed all normal crew tasks.
 - Sailing training and academic instruction on ocean resources.
- Feb 2010–** **Participant**, *Programa Delta*, FEUP, Portugal.
- May 2011** Advanced mathematics programme for undergraduate Electrical Engineering students, with lectures on Combinatorics, Logic, Topology and Algebra.
- 2008–Jul 2009** **Participant**, *Quark!–Physics School*, FCTUC, Portugal.
Physics school for high school students in preparation for Physics Olympiads. Lectures and problem solving on Classical and Quantum Mechanics, Electromagnetism, Thermodynamics, and Optics.

Interests

Street photography; cyberpunk literature; design; typography; biking; travelling.