

JOÃO CARTUCHO

Education	CARNEGIE MELLON UNIVERSITY 10/2017–12/2017 Visiting Scholar, Machine Learning, Professor: Manuela Veloso	Pittsburgh, PA, USA
	<ul style="list-style-type: none">– Introduced an algorithm in which robots know how to address their visual perception limitations: they rely on proactively asking for help from humans in the environments for labeling the surrounding objects.	
	POLITECNICO DI TORINO 09/2015–08/2016 Erasmus Student, Computer Science, GPA: 26.44/30.00	Torino, Italy
	<ul style="list-style-type: none">– Able to develop complex data structures and ADTs (linked lists, queues, stacks, heaps, trees, hash tables and graphs) and related algorithms– Able to evaluate algorithm complexity and improve efficiency in terms of execution time and/or memory use– Able to solve optimization and network flow problems, using exact methods, heuristics or linear programming– Able to develop strategies for problem solving with deep learning, pattern recognition or neural networks– Able to develop computer vision applications	
	INSTITUTO SUPERIOR TÉCNICO, LISBON 09/2013–now M.S. in Aero-Space Engineering. Expected graduation date: 12, 2017 Current Master's Average (0-20): 17.44	Lisbon, Portugal
	<ul style="list-style-type: none">– Able to fully develop all stages of the life-cycle of airplanes, helicopters, robotized aircrafts, spaceships and satellites, from its conception and project, to the operation and maintenance, tests and production.	
	UNIVERSITY ENTRANCE EXAMINATION National Exams (final grade 0-20):	PORTUGAL
	<ul style="list-style-type: none">– Mathematics A: 18.1– Physics and Chemistry: 19.8	
Experience	GOOGLE SUMMER OF CODE 2017 05/2017–08/2017 OpenCV Documentation Improvement Tools	Lisbon, Portugal
	<ul style="list-style-type: none">– HighGui module in Java;– Python code Tests (using Pylint);– Java compiling Tests (using Apache Ant);– Function/Constant/Class signatures in Python and Java;– 15 updated tutorials (added Java and Python codes).	
	GOOGLE SUMMER OF CODE 2016 05/2016–08/2016 Multi-language OpenCV Tutorials in Python, C++ and Java	Torino, Italy

- Choose Your Language Buttons;
- Tools to Enhance Usability;
- Java and Python translation of the code in C++.

Project Activities

DRONE LOCALIZATION USING EKF AND CV Lisbon, Portugal
09/2016–01/2017

Course: Autonomous Systems.

Real-time pose estimation (position + orientation) of a Drone merely with its camera. This task was achieved by using an Extended Kalman Filter (EKF) and Computer Vision with data from aerial images.

Final grade 0-20 : 19 (best student in 2016/2017)

FINGERPRINT BADGING SYSTEM Torino, Italy
02/2016–07/2016

Course: Project and Laboratory on Communication Systems.

Developing a Badging System Device using .NET Gadgeteer FEZ Spider Kit from GHI Electronics.

Final grade 0-30 : 30L (excellent)

HANDWRITING DIGIT RECOGNITION Torino, Italy
09/2015–07/2016

Course: Computer Vision.

Developing Software to recognize handwritten digits in a photo.

Final Project grade 0-5 : 5 (best)

Skills Programming Languages: C (grade 19/20), C++, C# (grade 30/30), Java (grade 30/30), Matlab, Python, HTML, Javascript, jQuery
Extra Interests: OpenCV, ROS, Solid Works

Languages: Portuguese (native), English (fluent, Cambridge ESOL - FCE), Italian (fluent)
Volunteering in: Finland, Greece, Italy, Netherlands, Portugal, Romania, Turkey

Honors/Awards

- Academic Merit Diploma, IST - Aerospace, 2015/2016
- FCT Scholarship, CMU
- 2nd place, CMU's Annual Robotics Hackathon

Publications TOWARDS A ROBUST INTERACTIVE AND LEARNING SOCIAL ROBOT
Submitted to AAMAS 2018.
Michiel de Jong, Kevin Zhang, Travers Rhodes, Aaron Roth, Robin Schmucker, Chenghui Zhou, Sofia Ferreira, João Cartucho, Manuela Veloso.

References **Manuela Veloso**
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Carnegie Mellon University
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Vincent Rabaud
Google Inc., Senior Software Engineer
OpenCV Foundation, Co-founder
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