

# JOÃO CARTUCHO

## Personal Information

*Nº7 R/C Dto, Rua Filinto Elísio, 1300-241, Lisbon, Portugal*

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## Education

POLITECNICO DI TORINO

Torino, TO, ITALY

09/2015–08/2016

Abroad as an Erasmus student in Computer Science Courses.

- 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

Lisbon, LIS, PORTUGAL

09/2013–now

(planned) M.S. in Aero-Space Engineering.

Expected graduation date: 12, 2017

Current Master's Average (0-20): 17.44

- 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

PORTUGAL

National Exams (final grade 0-20):

- Mathematics A: 18.1
- Physics and Chemistry: 19.8

## Internship Experience

GOOGLE SUMMER OF CODE 2017

Lisbon, Portugal

05/2017–08/2017

Documentation Improvement

GOOGLE SUMMER OF CODE 2016

Torino, Italy

05/2016–08/2016

Multi-language OpenCV Tutorials in Python, C++ and Java

- As a student, I worked as an open source code developer for this Google project. It consisted of developing tools to improve the documentation and official tutorials of OpenCV, a computer vision library. Since OpenCV has had 10 million downloads so far the tutorials are seen by thousands of people every single day, which stated the importance of this project.

CARNEGIE MELLON UNIVERSITY  
(planned) 09/2017–12/2017

Pittsburgh, Pennsylvania

The problem of collaborative robots (CoBots) - Symbiotic interaction with humans

## Project Activities

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

Lisbon, Portugal

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  
02/2016–07/2016

Torino, Italy

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  
09/2015–07/2016

Torino, Italy

Course: Computer Vision.

Developing Software to recognize handwritten digits in a photo.

Final Project grade 0-5 : 5

CLUSTERING ALGORITHM OF VECTOR QUANTIZATION  
09/2015–07/2016

Torino, Italy

Course: Artificial intelligence.

Clustering the MNIST 10-digit set database, obtaining a final error of 4.8% using a 10 minutes computation over the 60K-digits set.

Final Project grade 0-5 : 5

## Skills

Programming Languages: C (grade 19/20), C++, C# (grade 30/30), Java (grade 30/30), Matlab, Python, HTML, Javascript, jQuery

Extra Interests: OpenCV, CPLEX, Solid Works, Photoshop, Sony Vegas, Micro Framework.NET, ROS, Adobe Illustrator, Unity

Languages: Portuguese (native), English (fluent) - Cambridge ESOL - FCE, Italian (fluent), Spanish (beginner)

Volunteering and Interchanges: Finland, Greece, Italy, Netherlands, Portugal, Romania, Turkey

## References

**Vincent Rabaud**

Google Inc., senior software engineer

OpenCV Foundation, co-founder

vincent.rabaud@gmail.com

**Valentina Gatteschi**

PhD. Politecnico di Torino

Dipartimento di Automatica e Informatica

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