EDGAR RIBA

Education

UNIVERSITAT AUTONOMA DE BARCELONA — Barcelona, Spain
10/2015–now
Ph.D. in Computer Science
Dissertation: *Depth estimation with deep nets and geometric computer vision.*
Advisor: Daniel Ponsa.
Research Topics: Deep Learning, Local Features, Camera Pose and depth estimation.

UNIVERSITAT POLITECNICA DE CATALUNYA — Barcelona, Spain
07/2012–06/2015
M.S. in Automatic Control and Robotics.
Dissertation: *Implementation of a 3D pose estimation algorithm.*
Advisors: Adrian Penate and Francesc Moreno-Noguer.

UNIVERSITAT POLITECNICA DE CATALUNYA — Barcelona, Spain
07/2008–06/2012
B.S. in Geomatic and Surveying Engineering.

Work Experience

ARRAIY, Inc. — Barcelona, Spain.
11/2017–now
PhD candidate and Research Engineering Intern

- remotely working on research for depth estimation with deep nets and 3D geometric computer vision for VFX content generation.

OPENCV FOUNDATION
04/2018–now
Member of the Board of the OpenCV library fundation

- representing the OpenCV library in public events to advertise the Open Computer Vision framework (10M downloads).
- mentoring collaboration projects (e.g. during Google Summer of Code).

ARRAIY, Inc. — Palo Alto, CA, USA.
05/2017–10/2017
Research Engineering Intern, Geometry group

- developed and integrated an internal framework for differential 3D geometry using deep nets.

COMPUTER VISION CENTER — Barcelona, Spain
10/2015–05/2017
PhD candidate, MultiSpectral Image Analysis and Understanding group

- worked on deep learning applied to local features.
- holder of the trainee research staff grant in the CS department at the Universitat Autonoma de Barcelona.

OPENCV — online
05/2016–08/2016
Intern, Google Summer of Code

- integrated tiny-dnn to OpenCV contrib by adding a wrapper to the caffe converter.

- fixed bugs in tiny-dnn and developed several new features such as GPU support via OpenCL and NNPACK optimizations.

OPENCV online
05/2015–08/2015
Intern, Google Summer of Code

- developed the Structure From Motion module using a customized version of Libmv.

ALDEBARAN ROBOTICS Paris, France
02/2015–06/2015
Intern Software Engineer, Perception team

- designed and implemented an algorithm for people detection and tracking by sensor fusion using ROS, OpenCV and C++.

OPENCV online
05/2014–08/2014
Intern, Google Summer of Code

- designed and implemented a real time pose estimation algorithm for textured objects.
- implemented the PnP method: *A direct least-squares* (DLS) in the calib3d module.
- contributed with a tutorial for the calib3d module.

INSTITUT DE ROBOTICA I INFORMATICA INDUSTRIAL (CSIC-UPC)
Barcelona, Spain
05/2014–08/2014
Research Assistant, Perception and Manipulation group

- worked on my masters thesis in geometric computer vision.

Teaching Experience

UNIVERSITAT POLITECNICA DE CATALUNYA Barcelona, Spain
310209, *Electromagnetism and Optics*, Fall 2007: Teaching Assistant
310209, *Electromagnetism and Optics*, Spring 2007: Teaching Assistant

UNIVERSITAT AUTONOMA DE BARCELONA Barcelona, Spain
102708, *Software Engineering I*, Spring 2016-2018: Teaching Assistant

Professional Activities

Student and Mentor of Google Summer of Code mentor from 2014 to 2018.

Member of the board of the official OpenCV foundation.

Mantainer/developer of the tiny-dnn library involved in the core development and design, bug fixes and code review.

Contributed in many Open Source projects such as OpenCV, tiny-dnn, Pytorch, ROS, Object Recognition Kitchen, OpenDroneMap and OpenSfM.

Participated in robotics competitions and campus such as the HUMABOT Robot Competition 2014 during the *IEEE-RAS International Conference on Humanoid Robots* (Madrid, Spain) and the RoCKIn Camp 2014 organized by La Sapienza University of Rome (Rome, Italy) within the company PAL Robotics.

Co-founder and member of the *La Konfraria de la Vila del Pingui*. An Open Source community, organizing local events and workshops spreading the free software culture.

Skills Competence: Comuter Vision (local features, camera pose estimation), Deep Learning, Robotics, Programming.
Programming Languages: C++, Python.
Programming Libraries: Pytorch, OpenCV, ROS, tiny-dnn.
Extra Interests: Git, Docker, Vim, CMake, OpenCL, Android.
Languages: Catalan (native), Spanish (native), English (professional)

Software *tiny-dnn*: header only, dependency-free deep learning framework in C++11.

Papers in Reviewed Proceedings

V. Balntas, E. Riba, D. Ponsa, K. Mikolajczyk, "Learning local feature descriptors with triplets and shallow convolutional neural networks", **BMVC**, 2016.

Relevant Coursework

- *Object Detection* (Free online course, Universitat Autonoma de Barcelona. Fall 2015)
- *Machine Learning* (Free online course, Stanford. Fall 2014)
- *Introduction to Robot Operating System (ROS)* (Universitat Politecnica de Catalunya. Spring 2014)

References

Dr. Gary Bradski
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Dr. Vincent Rabaud
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Dr. Francesc Moreno-Noguer
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