



Roberto Valle Fernández

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Curriculum Vitae

Education

Technical University of Madrid <i>PhD Programme in Artificial Intelligence</i> Thesis: Multi-task shape preserving face alignment.	Madrid, Spain 2015 - 2020
Rey Juan Carlos University <i>MSc in Computer Vision, 8.83/10</i> Thesis: Text detection and recognition in the wild.	Madrid, Spain 2011 - 2013
Rey Juan Carlos University <i>MSc in Computer Science and Engineering, 7.91/10</i> Thesis: Vehicle localization, license plate recognition and model identification.	Madrid, Spain 2009 - 2011
Rey Juan Carlos University <i>BSc in Computer Science, 7.19/10</i> Thesis: Vehicle model recognition.	Madrid, Spain 2006 - 2009

Internship

University of Nottingham <i>Under the supervision of Prof. Georgios Tzimiropoulos</i> Computer Vision Laboratory.	Nottingham, England 2019
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Scientific Publications

Multi-task Head Pose Estimation In-the-Wild <i>Roberto Valle, José M. Buenaposada, Luis Baumela</i> IEEE Transactions on Pattern Analysis and Machine Intelligence, PAMI 2021.	2020
Cascade of Encoder-Decoder CNNs with Learned Coordinates Regressor for Robust Facial <i>Roberto Valle, José M. Buenaposada, Luis Baumela</i> Pattern Recognition Letters, PRL 2020, 136, pp. 326-332.	2019

Face Alignment using a 3D Deeply-initialized Ensemble of Regression Trees

Roberto Valle, José M. Buenaposada, Antonio Valdés, Luis Baumela

2019

Computer Vision and Image Understanding, CVIU 2019, 189.

Facial Landmarks Detection Using a Cascade of Recombinator Networks

Pedro D. López, Roberto Valle, Luis Baumela

2018

23rd Iberoamerican Congress on Pattern Recognition, CIARP 2018, pp. 575-583, Madrid, Spain, November 19-22.

IAPR Best Student Paper Award.

A Deeply-initialized Coarse-to-fine Ensemble of Regression Trees for Face Alignment

Roberto Valle, José M. Buenaposada, Antonio Valdés, Luis Baumela

2018

European Conference on Computer Vision, ECCV 2018, pp. 609-624, Munich, Germany, September 8-14.

Benchmarking Head Pose Estimation in-the-Wild

Elvira Amador, Roberto Valle, José M. Buenaposada, Luis Baumela

2017

22nd Iberoamerican Congress on Pattern Recognition, CIARP 2017, pp. 45-52, Valparaíso, Chile, November 7-10.

Head Pose Estimation In-the-Wild Using a Random Forest

Roberto Valle, José M. Buenaposada, Antonio Valdés, Luis Baumela

2016

9th Conference on Articulated Motion and Deformable Objects, AMDO 2016, pp. 24-33, Palma de Mallorca, Spain, July 13-15.

Patents

Localization of Planar Objects in Images Bearing Repetitive Patterns

Luis Baumela, José M. Buenaposada, Roberto Valle, Miguel A. Orellana, Jorge Ramirez

2020

U.S. Patent 10922582, February 16, 2021.

Teaching Assistant

Reconocimiento de Formas

Prof. Luis Baumela

2017 - 2019

Spanish.

Deep Learning

Prof. Luis Baumela

2017 - 2019

English.

Languages

Spanish

Native proficiency

English

First Certificate in English (FCE), Cambridge ESOL

Scholarships Received

Menéndez Pelayo International University

Madrid, Spain

Intensive English language classes, Intermediate Level 2

2012 - 2014

Level B2 related to Common European Framework of Reference for learning languages.

Spanish Ministry of Education Scholarship

Manchester, England

Language course abroad for a minimum period of 3 weeks

2011

Research Areas

Technical University of Madrid

Perception for computers and robots group

2013 - 2020

Collaborator for the PCR group interested in the following areas:

- Computer Vision
- Machine Learning
- Artificial Intelligence
- Deep Learning

Computer Skills

Operating Systems

Linux, Mac OS X, Windows, iOS, Android

Programming Languages

C++, Python, Octave/Matlab

Computer Vision Libraries

OpenCV, Tensorflow, Keras, Caffe, Boost, Scikit-Learn

Database Management

PostgreSQL, PostGIS

Data Visualization and Analytics

TIBCO Spotfire

Research Projects

Research HEIMDAL-UPM project

Detecting semantic data using multiple sensors in-the-wild

2017 - 2019

Spanish Ministry of Education and Competitiveness.

Research SPACES-UPM project

Human behaviour supervision using multiple sensors

2014 - 2016

Spanish Ministry of Education and Competitiveness.

Work Experience

Telefónica S.A.

Madrid, Spain

Deep learning and satellite images to estimate the impact of COVID-19

2020 - 2021

Motivated by the fact that the Coronavirus Disease (COVID-19) pandemic has caused worldwide turmoil in a short period of time since December 2019, we estimate the negative impact of COVID-19 lockdown in the capital of Spain, Madrid, using commercial satellite imagery courtesy of Maxar Technologies©. The authorities in Spain are adopting all necessary measures, including urban mobility restrictions, to contain the spread of the virus and mitigate its impact on the national economy. These restrictions leave signatures in satellite images that can be automatically detected and classified. Demo: <https://www.youtube.com/watch?v=iJq0BnK9upQ>.

The Grafter S.L.

Madrid, Spain

Facade building localisation for an augmented reality Android and iOS app

2013 - 2015

Research and develop on algorithms for localisation of buildings (with repetitive structures) on video streams. The application renders the live camera preview frame on the display to represent a superimposed image over the building. Demo: <https://www.youtube.com/watch?v=hIj3VY6du0k>.

CAB Magazine Online S.L.

Madrid, Spain

OCR for Spanish ID documents on video

2012

The goal of the project was to read, in short video streams, the three OCR lines of the Spanish ID documents. OCR lines appears also on other countries passports (our software is valid for this other documents also with minimal customization). In this project we developed a full prototype using C++ and OpenCV on GNU/Linux. Unfortunately the company gave up on the project before the full validation of the prototype so we have the software and the project available to any interested company. Demo: <https://www.youtube.com/watch?v=3CaBmIKT06Y>.