

CONTACT

INFORMATION

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London, United Kingdom  
Nationality: Spanish

RESEARCH  
INTERESTS

**Computer Vision:** Color Constancy, Computational Photography, Stixel World and 3D Reconstruction.  
**Robotics:** Autonomous Driving.  
**HPC:** Parallel Computing, CUDA, GPGPU and Real-time Algorithms.

PROFESSIONAL  
EXPERIENCE

**Deep Learning Research Scientist** **May 2020-Currently**  
**SLAMcore Ltd**, London, United Kingdom

- Working on Computer Vision topics for scene understanding and depth completion.

**Research Engineer** **March 2019-February 2020**  
**Computer Vision group at Huawei Noah's Ark lab**, London, United Kingdom

- Working on Color Constancy (Auto White Balance).

**PhD Internship** **June 2018-December 2018**  
**Computer Vision group at Element AI**, Montreal, Canada

- Working on Deep learning and Computer Vision.
- Advisor: [Dr. David Vazquez](#)

**PhD Internship** **January 2017-July 2017**  
**Dept. of Environment Perception at Daimler AG**, Stuttgart, Germany

- Scholarship: SEBAP mobility - Internship Grant
- Objective: To develop a faster and more accurate version of the Stixel World algorithm trying to get rid of some model assumptions.
- Advisor: [Dr. Uwe Franke](#)

**Assistant Professor** **2015-2018**  
Computer Architecture and Operating Systems (UAB department), **Universitat Autònoma de Barcelona**, Spain

- Subjects: Fundamentals of Computer Science, Distributed Systems

EDUCATION

**PhD in Computer Vision (Cum Laude, International Doctor)** **2015-2020**  
**Universitat Autònoma de Barcelona**, Spain

- Thesis title: Embedded 3D Reconstruction for Autonomous Driving
- Advisors: [Dr. Juan Carlos Moure](#) and [Dr. David Vázquez](#)
- Area of Study: Computer Vision and High Performance Computing
- Scholarship: PIF Autonomous University grant

**MSc in Computer Vision** **2015**  
**Universitat Autònoma de Barcelona**, Spain

- Dissertation title: A comparison of perceptual image quality metrics

**Bachelor of Computer Science** **2014**  
 Universitat Autònoma de Barcelona, Spain

- Dissertation title: A metric to measure the difference between images

## PUBLICATIONS

### Journal Papers

**3D Perception with Slanted Stixels on GPU** **2021**

D. Hernandez-Juarez, A. Espinosa, D. Vázquez, A. M. López, & J. C. Moure  
 In *IEEE Transactions on Parallel and Distributed Systems (2021) (TPDS)*

**Slanted Stixels: A way to represent steep streets** **2019**

D. Hernandez-Juarez\*†, L. Schneider\*, P. Cebrian, A. Espinosa, D. Vázquez, A. M. López, U. Franke, M. Pollefeys, & J. C. Moure

In *International Journal of Computer Vision (2019) (IJCV)*

\* Both authors contributed equally

† Work performed during an internship at Daimler AG

### Conference Papers

**A Multi-Hypothesis Approach to Color Constancy** **2020**

D. Hernandez-Juarez, S. Parisot, B. Busam, A. Leonardis, G. Slabaugh, & S. McDonagh  
 In *Computer Vision and Pattern Recognition 2020 (CVPR2020)*

**Slanted Stixels: Representing San Francisco's Steepest Streets** **2017**

D. Hernandez-Juarez\*†, L. Schneider\*, A. Espinosa, D. Vázquez, A. M. López, U. Franke, M. Pollefeys, & J. C. Moure

In *British Machine Vision Conference 2017 (BMVC2017)*

Awarded as **Best Industry Paper**

\* Both authors contributed equally

† Work performed during an internship at Daimler AG

**GPU-accelerated real-time stixel computation** **2017**

D. Hernandez-Juarez, J. C. Moure, A. Espinosa, D. Vázquez, & A. M. López

In *Winter Conference on Applications of Computer Vision 2017 (WACV2017)*

**Embedded real-time stereo estimation via Semi-Global Matching on the GPU** **2016**

D. Hernandez-Juarez, A. Chacón, A. Espinosa, D. Vázquez, J. C. Moure, & A. M. López

In *International Conference on Computational Science 2016 (ICCS2016)*

## TECHNICAL SKILLS

**Programming:** C/C++, Assembler, Matlab, Python, .NET, Java, SQL

**Libraries:** *Vision* (OpenCV), *Deep Learning* (PyTorch, Tensorflow, Caffe), *HPC* (CUDA, SIMD, Intel intrinsics, OpenMP)

**Others:** L<sup>A</sup>T<sub>E</sub>X, MS Office

## LANGUAGES

**Spanish:** Native Language

**English:** Fluent proficiency

**Catalan:** Native Language

AWARDS

|                                    |      |
|------------------------------------|------|
| Cum Laude PhD Thesis - UAB         | 2020 |
| Best Industrial Paper Award - BMVC | 2017 |

FELLOWSHIP

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| PIF-UAB - Doctoral fellowship          | 2015-2018 |
| SEBAP Mobility - Internship fellowship | 2017      |