

CONTACT  
INFORMATION

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RESEARCH  
INTERESTS

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

EDUCATION

**PhD in Computer Vision** **2015-Currently**  
Universitat Autònoma de Barcelona, Spain

- Thesis title: Performance engineering on embedding vision for autonomous driving
- Advisors: Dr. Juan Carlos Moure and Dr. David Vázquez
- Area of Study: High Performance Computing for Advanced Driver Assistance Systems
- 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

PROFESSIONAL  
EXPERIENCE

**PhD Internship** **June 2018-Currently**  
**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-Now**  
Computer Architecture and Operating Systems (UAB department), **Universitat Autònoma de Barcelona**, Spain

- Subjects: Fundamentals of Computer Science, Distributed Systems

**Web developer** **2008-2010**  
**Synerquia HR Tools**, Spain

Involved in Web-Based application development project:

- Backend programming with PHP, Java and MySQL.
- Database design and implementation.
- Implementing Web Services.
- Refactoring and improving maintainability of the codebase.

## PUBLICATIONS

### Conference Papers

#### **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:** *HPC* (CUDA, SIMD, Intel intrinsics, OpenMP), *Vision* (OpenCV, VTK, VLFeat)

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

## LANGUAGES

**Spanish:** Native Language

**English:** Fluent proficiency

**Catalan:** Native Language

## AWARDS

**Best Industrial Paper Award - BMVC**

**2017**

## FELLOWSHIP

**PIF-UAB - Doctoral fellowship**

**2015-2018**

**SEBAP Mobility - Internship fellowship**

**2017**