

CONTACT

INFORMATION

dhernandez0@gmail.com
<https://www.danihernandez.eu>
Terrassa, Catalonia, Spain
Nationality: Spanish

RESEARCH
INTERESTS

Computer Vision: Color Constancy, Panoptic Segmentation, Depth Completion, Stixel World, 3D Reconstruction, TensorRT, Deep learning for embedded platforms.
Robotics: Autonomous Driving, SLAM.
HPC: Parallel Computing, CUDA, GPGPU and real-time Algorithms.

PROFESSIONAL
EXPERIENCE

Senior Research Engineer **April 2023-Currently**
Research group at Slamcore, Remote

- Working on different computer vision tasks: panoptic segmentation, video panoptic segmentation, TensorRT, deep learning for embedded devices.

Deep Learning Research Scientist **May 2020-April 2023**
Research group at Slamcore, Remote

- Working on different computer vision tasks: depth completion, semantic segmentation.

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 (acquired by ServiceNow), 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 (now Mercedes-Benz Group 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 **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

Self-Supervised Depth Completion for Active Stereo **2022**

F. Warburg, D. Hernandez-Juarez, J. J. Tarrio, A. Vakhitov, U. Bonde, & P. F. Alcantarilla

In *IEEE Robotics and Automation Letters* (2022) (**RA-L**)

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++, Matlab, Python, Java, SQL

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

Others: L^AT_EX, MS Office

LANGUAGES

Spanish: Native Language

English: Fluent proficiency

Catalan: Native Language

AWARDS

Extraordinary PhD Prize - Universitat Autònoma de Barcelona **2023**

Best Industrial Paper Award - BMVC **2017**

FELLOWSHIP

PIF-UAB - Doctoral fellowship **2015-2018**

SEBAP Mobility - Internship fellowship **2017**