

# CURRICULUM VITAE

## IDENTITY

**Jérémy Deray**

**Navigation Software Engineer**

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Carrer del Pistó 1, 2-1  
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## CONTACTS

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## FIND ME ONLINE



## KEYWORDS

C++ - Python - Git - ROS - Gazebo - Linux - Docker - QtCreator - Matlab - OpenCV - PCL - Eigen - Ceres - IpOpt - SLAM - Perception - Sensor Fusion - Trajectory Planning - Non-Linear Optimization - Kalman Filter - Computer Vision - Trello - Agile - Scrum

## LANGUAGE

**French** - mother tongue

**English** - proficient

**Spanish** - basic

## PROFESSIONAL EXPERIENCE

### Navigation Software Engineer

Since September 2014

PAL Robotics - Barcelona, Spain

Development and maintenance of a c++/ROS SLAM library, a place-recognition algorithm using camera and a loop-closure algorithm using 2D Lidar. Development of an optimization-based trajectory planning and obstacle avoidance. Automating the kinematics calibration of a mobile-base. Camera calibration. Unification, maintenance and deployment of a navigation framework for various robots (mobile-base, mobile-manipulator, semi-humanoid). Client training and assistance. MSc students internship supervision.

### Master Research Training

6 month - 2014

PAL Robotics - Barcelona, Spain

Hardware and software design of a multi-camera omnidirectional vision system (alt-azimuthal-complete) for the topological localization of a humanoid robot. Interfaced the device with a VR headset for remote monitoring.

### Internship

3 month - 2013

Le2i UMR CNRS 6306 - Le Creusot, France

Photogrammetry software comparison for 3D reconstruction of cultural heritage monuments monitored using a uav.

## EDUCATION

### Industrial PhD

Since February 2015

Institut de Robòtica i Informàtica Industrial, Universitat Politècnica De Catalunya & PAL Robotics - Barcelona, Spain  
Multi-modal navigation and perception for service robots.

### Master of Science

2012 - 2014

Université de Bourgogne - Le Creusot, France  
Computer Vision and Robotics - MsCV.

### Bachelor Degree

2011 - 2012

IUT - Le Creusot, France  
Industrial Control using Artificial Vision.

### Higher National Diploma

2009 - 2011

IUT - Le Creusot, France  
Electrical Engineering and Industrial Computing.

## PUBLICATIONS AND CONFERENCES

J. Solà, J. Deray, and D. Atchuthan. A micro Lie theory for state estimation in robotics. Technical Report IRI-TR-18-01, Institut de Robòtica i Informàtica Industrial, Barcelona, 2018. Available at <http://arxiv.org/abs/1812.01537>

J. Deray, J. Sol, and J. Andrade-Cetto. Online joint self-calibration of differential-drive intrinsics and sensor extrinsics with pre-integration. 2018. Under-review

J. Deray, J. Sol, and J. Andrade-Cetto. Word ordering and document adjacency for large loop closure detection in 2-d laser maps. *IEEE Robotics and Automation Letters*, 2(3):1532–1539, July 2017. Work presented at ICRA 2017, Singapor.

D. Gurung, C. Jiang, J. Deray, and D. Sidibé. Hand Gestures Recognition and Tracking. preprint, HAL-00903898, June 2013  
Reviewer for ICRA & IROS.

## EXTRACURRICULAR

Third place with **Team Olympus Mons** at NASA's Space Robotics Challenge (Centennial Challenges Program) - June 2017.  
Constructing a Raspberry-based autonomous car.