

# Rodríguez Canosa, Gonzalo Ruy

*PhD in Robotics*

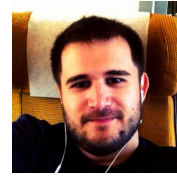
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Date of birth: 07-12-1984



*Doctor Engineer with great experience in hw+sw projects  
development. 5 year of experience.*

## Profesional Experience

### Working

- Feb 2014 **Senior development engineer**, eProxima, Madrid, Spain.  
present Real Time Publisher Subscriber (RTPS) implementation (DDS standard by the OMG) focused on performance and security.
- Feb 2009 **PhD researcher**, *Robotic and Cybernetic Group*, Madrid, Spain.
- Nov 2013 MultiRobot Systems for security and surveillance in Critical Infrastructures.
- Sep 2011 **Visiting researcher**, *Robotics Research Group (UoA)*, Auckland, New Zealand.
- Dec 2011 Dynamic object detection system from UAV based on optical flows differences, supervised by Dr. Bruce MacDonald
- May 2008 **Trainee Engineer**, *Flight Science Dept. at Bombardier*, Montreal, Canada.
- Aug 2008 User interface to optimize the documentation process of the simulation and testing reports.

### Scholarships and Grants

- Feb 2008 **Research scholarship**, *Transportation Engineer Dept.*, University of Seville, Spain.
- Apr 2008 Study of the CANBUS devices, protocols and data in different automobiles.
- Nov 2007 **Final Degree Project**, *Automatic and Systems Engineering Dept.*, Seville, Spain.
- Jan 2008 User interface to define transportation and storage problems was created, along with a centralized control system to obtain the optimum solution.

## Education

- 2009-2013 **PhD in Robotics and Automatics**, 4 years, Technical University of Madrid, Spain.
- 2008-2010 **MSc in Automatics and Robotics**, 2 years, Technical University of Madrid, Spain.
- 2006-2007 **Erasmus**, 1 year, Royal Institute of Technology (KTH), Stockholm, Sweden.
- 2002-2008 **MsC in Systems and Automatics Engineering**  
**BSc in Industrial Engineering**, 5 years, University of Seville, Spain.
- 2000-2002 **Secondary Education in High-School Martinez Montañés**, Seville, Spain.  
International Baccalaureate Organization Diploma - IBO.
- 1988-2000 **Primary Education in German School Albrecht Dürer**, Seville, Spain.

## Languages

- Spanisch **Native language**
- Englisch **Full professional competence** *High written and spoken level.*
- German **Basic professional competence** *'Zentrale MittelstufePrüfung' of the Goethe Institut (C1).*

## Technical capabilities

### Computer Skills

|              |  |
|--------------|--|
| SO           | Linux and Windows.   |
| Office Suite | MS Word, Excel, PowerPoint, LaTeX.   |
| C++          | Large experience in different projects with multiple libraries (Boost, OpenCV, ...).<br>Experience with performance improvements techniques and profilers tools. |
| Programming  | Beginner level of C#, Python, Django, HTML, Java, Android SDK, OpenGL.   |
| Development  | CMake, Git, SVN, Eclipse, Microsoft Visual Studio, ...   |

### Engineering Processes

|            |  |
|------------|--|
| Simulation | Webots, Player-Gazebo, Simulink.   |
| Matlab     | Fast prototyping of algorithms. Graphical Interfaces.  |
| Robotics   | Mobile and aerial robotics (UGV y UAV), Robot Operating System (ROS).  |
| Vision     | Expert development in OpenCV and PCL (Point Cloud Library).  |
| Hardware   | Experience in sensor and actuator control. Data acquisition platforms and mechanisms design. Experience with LIDAR sensors and 3D cameras. |

## Research Projects

|             |  |
|-------------|--|
| 2011 - 2013 | RTOS national project. Multirobot Systems for protection of large critical infrastructures. Ref: DPI2010-17998 of DPI subprogram |
| 2009 - 2010 | Networked Multi-Robot Systems (NMRS) project by the European Defense Agency. B-0004-ESM2_ERG.                                    |

## Publications

- G. Rodríguez-Canosa, A. Barrientos y J. Cerro *Detection and Tracking of Dynamic Objects by Using a Multirobot System: Application to Critical Infrastructures Surveillance* Sensors. vol.14 -2 pags. 2911 - 2943. 2014.
- D. Sanz, G. Rodríguez-Canosa, J. Barrientos, J. Cerro, J. Hernandez, A. Barrientos. *Sensorized robotic sphere for large exterior critical infrastructures supervision* Journal of Applied Remote Sensing vol.7 pags. 1-19 (F.I. .876) 2013. JCR: 1.953
- Gonzalo R. Rodríguez-Canosa, Stephen Thomas, Jaime del Cerro, Antonio Barrientos and Bruce MacDonald. *A Real-Time Method to Detect and Track Moving Objects (DATMO) from Unmanned Aerial Vehicles (UAVs) Using a Single Camera*. Remote Sensing. 2012, 4(4), 1090-1111; doi:10.3390/rs4041090. JCR: 2.171

## PhD thesis

|             |  |
|-------------|--|
| Title       | Detection and Tracking of Dynamic Objects. A MultiRobot Approach to Critical Infrastructures Surveillance.   |
| Advisors    | Jaime del Cerro and Antonio Barrientos.  |
| Description | My thesis was focused in MultiRobot Systems for security and surveillance of Exterior Critical Infrastructures (CI). I have developed detection of dynamic objects algorithms for both aerial and ground robots. A Point Cloud based robot localization system has also been developed. Main skills and tools used in this thesis include but are not limited to: Mobile robotics, Simulation, Webots, ROS, PCL, OpenCV.<br>Download: <a href="#">thesis.pdf</a> |