

# Alberto Olivares Vicente

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Member of the "Signal Processing And Biomedical Applications  
Research group from the Department of Signal Theory,  
Networking and Communications from the University of  
Granada, Spain

## Education

- 2010-today **Grad School**, *University of Granada*, Granada, Title of the thesis: Human Body Monitoring by means of Inertial Sensors.
- 2009-2010 **Master Degree**, *University of Granada*, Granada, *Master in Computer and Networking Engineering*.
- 2004-2009 **Engineering Degree**, *University of Granada*, Granada, *Telecommunication Engineering*.  
2007-2008 at the Swiss Federal Institute of Technology Lausanne

## Ph.D thesis

- title *Human Body Monitoring by means of Inertial Sensors*
- supervisors Dr. Gonzalo Olivares Ruiz, Dr. Dr. Juan Manuel Górriz Sáez, Dr. Javier Ramírez Pérez de Inestrosa

## Master thesis

- title *Monitoring and Capture of Human Body Motion*
- supervisors Dr. Gonzalo Olivares Ruiz, Dr. Dr. Juan Manuel Górriz Sáez, Dr. Javier Ramírez Pérez de Inestrosa
- Date of presentation September 2010, *Qualification*: Cum Laude

## Degree thesis

- title *Sistema y procesamiento de señales para la captura de movimientos corporales: aplicaciones para telerehabilitación y análisis de la actividad física, (System for Human Body Movement Capture: Telerehabilitation and Physical Activity Analysis Applications*
- supervisors Dr. Gonzalo Olivares Ruiz and Dr. Francisco Gómez Mula

Date of presentation September 2010, *Qualification*: Cum Laude

Awards 2010-Best Degree thesis of the Telecommunication Engineering School

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## Employment History

- 09/2010-Today **Researcher**, (*Grant holder*), Department of Signal Theory, Networking and Communications, University of Granada, Spain.
- 11/2009-08/2010 **Researcher**, *Amlvital Project*, Department of Computer Architecture and Computer Technology, University of Granada, Spain.
- 03/2009-10/2009 **Researcher**, (*Grant holder*), Department of Computer Architecture and Computer Technology, University of Granada, Spain.
- 08/2008-01/2009 **Researcher**, *Internship*, Ingeniería y Control Remoto S.A., Granada, Spain.

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## Publications

### Papers in Refereed Journals

- 2011 **A. Olivares, J. M. Górriz, J. Ramírez and G. Olivares**, *Accurate human limb angle measurement: sensor fusion through Kalman, least mean squares and recursive least-squares adaptive filtering*, Meas. Sci. Technol. **22**, 025801, 15pp.

### Papers under revision in Refereed Journals

- 2011 **A. Olivares, G. Olivares, F. Mula, J. M. Górriz and J. Ramírez**, *Wagyromag: wireless sensor network for monitoring and processing human body movement*, Journal of Systems Architecture.

### Book Chapters

- 2011 **A. Olivares, J. M. Górriz, J. Ramírez and G. Olivares**, *Human Body Position Monitoring*, Recent Advances in Biomedical Signal Processing, Bentham Science Publishers.

### Contributions to Conferences

- 2010 **A. Olivares, G. Olivares, J. M. Górriz and J. Ramírez**, *Wagyromag: red inalámbrica de sensores inerciales para el registro y procesamiento de movimientos corporales*, I Simposio en Computación Empotrada, Congreso Español de Informática (CEDI), Valencia, Spain.
- 2010 **Francisco J. Quiles, Manuel Ortiz, Rafael Jiménez, Alberto Olivares, Peter Glösekötter**, *Módulo de adquisición de datos de bajo consumo*, Seminario Anual de Automática, Electrónica Industrial e Instrumentación, Bilbao, Spain.
- 2010 **C. Torres, P. Glösekötter, A. Olivares, H. Pomares, I. Rojas, G. Olivares**, *Reliable and Energy Optimized Routing Algorithm for WSN*, RFID-SysTech 2010, European Workshop on Smart Objects: Systems, Technologies and Applications, Ciudad Real, Spain.

- 2010 **A. Olivares, G. Olivares, J. M. Górriz and J. Ramírez**, *Fusion Adaptive Filtering for Position Monitoring in Intense Activities*, 5th International Conference on Hybrid Artificial Intelligence Systems (HAIS 2010), San Sebastián, Spain.
- 2010 **A. Olivares, G. Olivares, J. M. Górriz and J. Ramírez**, *Accurate Human Limb Angle Measurement in Telerehabilitation: Sensor fusion through Kalman, LMS and RLS Adaptive Filtering*, Ambient Intelligence and Future Trends - International Symposium on Ambient Intelligence (ISAMI 2010), Guimaraes, Portugal.
- 2010 **A. Olivares, G. Olivares, J. M. Górriz, J. Ramírez and Peter Glösekötter**, *A Study of Vibration-Based Energy Harvesting in Activities of Daily Living*, 4th International ICST Conference on Pervasive Computing Technologies for Healthcare, Munich, Germany.
- 2009 **A. Olivares, G. Olivares, J. M. Górriz and J. Ramírez**, *High-efficiency Low-cost Accelerometer-aided Gyroscope Calibration*, International Conference on Test and Measurement, Hong Kong, China.
- 2009 **Miguel Damas, Gonzalo Olivares, Héctor Pomares y Alberto Olivares**, *Laboratorio Virtual basado en Web para el ciclo completo de desarrollo de sistemas de control industriales*, Workshop en Informática Industrial (WIIND), Madrid, Spain.
- 2009 **G. Olivares, L. Galán, A.M. Prados y A. Olivares**, *Red inalámbrica de bajo consumo para telegestión de regadío*, Workshop en Informática Industrial (WIIND), Madrid, Spain.

## Participation in Research Projects

- 2010-2014 **Plataforma Abierta De Procesamiento de Imágenes para Ayuda al Diagnóstico de Alteraciones Neurológicas (PAPI-ADAN), (Open Image Processing Diagnosis Help Platform for Neurological Diseases)**, *Financed by: Conserjería de Innovación, Ciencia y Empresa de la Junta de Andalucía*, Participating entities: SIPBA (Signal Processing and Biomedical Applications) Research group.  
Grant: 297,000 euros
- 2009-2012 **Diagnóstico avanzado de enfermedades neurológicas mediante técnicas de reconstrucción y modelado de imágenes tomográficas cerebrales (Advanced Diagnosis of Neurological Diseases by means of Reconstruction and Modeling of Brain Tomographic Images)**, *Financed by:Consejería de Innovación, Ciencia y Empresa de la Junta de Andalucía*, Participating entities: SIPBA (Signal Processing and Biomedical Applications) Research group.  
Grant: 159,668 euros
- 2009-2011 **Plataforma Nuevas Técnicas de Reconstrucción, Procesado, Clasificación y Fusión de Imágenes Médicas para Diagnóstico Precoz de la Enfermedad de Alzheimer, (Platform of new Techniques for Reconstruction, Processing, Classification and Fusion of Medical Images to Help Early Diagnosis of Alzheimer)**, *Financed by:Subdirección General de Proyectos de Investigación del Ministerio de Ciencia e Innovación*, Participating entities: SIPBA (Signal Processing and Biomedical Applications) Research group.  
Grant: 54,800 euros

- 2009-2010 **Entorno digital personal para la salud y el bienestar (AmiVital), (Digital Personal Health and Welfare Environment)**, *Financed by: Centro para el Desarrollo Tecnológico Industrial, Comisión Interministerial de Ciencia y Tecnología*, Participating entities: Siemens (management), Telefónica I+D(Technical coordination), Telvent Interactiva, Ericsson España, Eptron, CPI, Acerca Comunicaciones, Airzone e IS2, ITACA (Grupo TSB), Fundación CARTIF, Fundación Rioja Salud, Hospital Universitario Puerta de Hierro, Instituto de Salud Carlos III, Universidad de Granada (Dpto. ATC), Universidad de Málaga (Grupo ISIS), Universidad Politécnica de Madrid (Grupos LST, GBT, CEDITEC y DIT) and Universidad de Zaragoza (Grupo Tecnodiscap). Grant: 786,227 euros
- 2009-2010 **Detección de enfermedades Neurológicas mediante Clasificación y Separación de señales (DENCLASES), (Detection of Neurological Diseases by means of Classification and Separation of Signals)**, *Financed by:Ministerio de Educación y Ciencia*, Participating entities: SIPBA (Signal Processing and Biomedical Applications) Research group. Grant: 112,654 euros
- 2009-2010 **Toolbox for Biomedical Signal and Image Processing based on Information Theory**, *Financed by:Ministerio de Ciencia e Innovación*, Participating entities: SIPBA (Signal Processing and Biomedical Applications) Research group. Grant: 11,720 euros
- 2009-2010 **Aplicación de algoritmos de control inteligente a la optimización de recursos de la Red de Distribución de aguas de la ciudad de Granada, (Application of Intelligent Control Algorithms to Optimize the Resources of the Public Water Network of the City of Granada)**, *Financed by:EMASAGRA S.A.*, Participating entities: Department of Computer Architecture and Computer Technology, University of Granada. Grant: 6,000 euros
- 2009-2010 **Desarrollo de dispositivos sensores y procesamiento de señales con Labview para telerehabilitación, (Development of Sensors and Signal processing Algorithms with Labview for Teherehabilitation)**, *Financed by:Ingeniería y Control Remoto S.A*, Participating entities: Ingeniería y Control Remoto S.A and Department of Computer Architecture and Computer Technology, University of Granada.
- 2009-2010 **REHABITIC (Telerehabilitation)**, *Financed by:Telefónica I+D*, Participating entities: Telefónica I+D and Department of Computer Architecture and Computer Technology, University of Granada.

## Teaching

- 2009 **Técnicas de monitorización, registro y procesamiento de señales de sensores cinemáticos con Labview, (Monitoring, Capture and Signal Processing Techniques for Kinetic Sensors using Labview)**, *15 hours*, Taught at Telefónica I+D Granada.

## Languages

- Spanish **Mother tongue**  
 English **Advanced level**  
 French **Advanced level**

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## Computer skills

**Programming Languages (General purpose)** Java, C

**Web programming (Languages)** XHTML, CSS, PHP, XML, MySQL, Javascript

**Specific tools** Matlab, Mathematica, Proteus, PSpice

**Rich Content Editors** L<sup>A</sup>T<sub>E</sub>X

**Web programming (CMS)** Joomla, Wordpress