

CURRICULUM VITAE



PERSONAL INFORMATION

Name: Luis Antidio

Last Name: Viguria Jimenez

Place and date of birth:

Seville (Spain), 08/May/1981

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Web page: http://grvc.us.es/~antidio/english_index.html

Research Interests: Coordination and cooperation of multi-agent systems, control theory applied to robotics and software architectures for robotics.

EDUCATION AND TRAINING

2008-Present **PhD. Candidate.** Department of Systems and Automation, University of Seville (2004-2008).
Advisor: Anibal Ollero.

2008 Master of Science in Electrical and Computer Engineering (M.S.E.C.E.) with **GPA 3.85/4.0**.

2006-2008 **Fulbright Scholar.**
Research Assistant, Georgia Institute of Technology (Atlanta, USA).
Advisor: Ayanna M. Howard.

2006 Advanced Studies Diploma (DEA) with **grade A**.

2004-2006 **PhD. student** in the Robotics, Vision and Control Group directed by Anibal Ollero.

PhD. Program in **Automation and Robotics**.
University of Seville.
Courses passed with **grade A**.

1999-2004 **Engineering degree in Telecommunication**
Third best record in the class 2004-2005
Specialized in Robotics and Remote Control
School of Engineering, University of Seville.

Final project for the technical degree:
System of Ultrasound Sensors for Autonomous Navigation evaluated as **A with honors**.

COMPLEMENTARY TRAINING

- High experience in the research and development of mobile robots.
- Advanced level in Linux operating systems.
- High experience in the programming of microcontrollers and hardware development.
- Knowledge of the object-oriented programming languages and particularly Java and C++.
- High experience with the architecture and simulators Player/Stage/Gazebo.
- Knowledge of the operating system for wireless sensor networks, TinyOS.

WORK EXPERIENCE

- Research Assistant at Georgia Institute of Technology (Atlanta, USA) funded by a Fulbright scholarship (2006-2008).
- PhD student at University of Seville supported by a national doctoral grant (2005-2006).
- Research assistant at University of Seville funded by a national research fellowship (2004-2005).
- Intern in USA in the company *Nelson Irrigation Corporation* (September-November 2004).

AWARDS

- **First Prize in “GeorgiaTech Paper Competition”** organized by SAIC (November 2007) for the paper titled: “An Integrated Task Allocation Approach for Multi-Robot Navigation in Realistic Scenarios”.
- **Schneider Electric (Spain) 2005 Award** in “*Innovation and development in automation systems*” in the XXVI Automation Conference (Alicante, 2005) for the paper titled: “PPCar (Personal Pendulum Car): Vehículo basado en péndulo invertido”.

RESEARCH PROJECTS

The distributed algorithms that I developed for multi-robot coordination have been tested in:

- **AWARE:** platform for Autonomous self-deploying and operation of Wireless sensor-actuator networks cooperating with AerRial objEcts.
- **Robotics Sensor Networks:** mobile robotic network design to help scientists get useful data and understand climate change causes.

I am one of the main developers of the software architecture for autonomous systems that has been used in:

- **AEROSENS:** cooperative perception using aerial robots (UAVs) and wireless sensor networks with mobile nodes.
- **CROMAT:** cooperation between UAVs and ground autonomous systems.

Other interesting projects that I participated:

- **DARPA Urban Grand Challenge 2007:** part of the GeorgiaTech team. I worked on the pose estimation module based on Kalman filter techniques.
- **Embedded Wisents:** which objective was to define a roadmap for cooperating objects, ubiquitous communication and wireless sensor networks.
- **PPCar:** I was in charge of the design, programming and integration of the platform. The platform is similar to the Segway vehicle and had the aim to be used as a research platform for control techniques.

More information about the projects can be found in my website.

SELECTED PUBLISHED PUBLICATIONS

A complete list of published publications is available in my website.

Journal Publications

- F. Gómez-Bravo, F. Cuesta, A. Ollero and A. Viguria, “Continuous curvature path generation based on Beta-spline curves for parking manoeuvres”, *in: Robotics and Autonomous Systems*. Vol. 56, Num.4. April 2008. Pgs. 360-372.

- A. Viguria, A. Prieto, M. Fiacchini, R. Cano, F. R. Rubio, J. Aracil and C. Canudas-de-Wit, “Desarrollo y experimentación de un vehículo basado en péndulo invertido (PPCar)”, in: *Revista Iberoamericana de Automática e Informática Industrial*. Vol. 3, Num.4. October 2006. Pgs. 54-66.

International Conferences

- A. Viguria, I. Maza and A. Ollero, “S+T: An algorithm for distributed multirobot task allocation based on services for improving robot cooperation”, in: *Proc. of the IEEE International Conference on Robotics and Automation (ICRA 2008)*. May 2008. Pasadena, USA.
- A. Viguria and A. Howard, “Upper Bound Analysis of a Cost Market-Based Algorithm Applied to the Initial Formation Problem”, in: *Proc. of the IEEE/RSJ 2007 International Conference on Intelligent Robots and Systems (IROS 2007)*. November 2007. San Diego, USA.
- A. Howard and A. Viguria, “Controlled Reconfiguration of Robotic Mobile Sensor Networks using Distributed Allocation Formalisms”, in: *Proc. of the NASA Science Technology Conference (NSTC 2007)*. June 2007. Maryland, USA.
- A. Viguria, I. Maza and A. Ollero, “SET: An algorithm for distributed multirobot task allocation with dynamic negotiation based on task subsets”, in: *Proc. of the IEEE International Conference on Robotics and Automation*. April 2007. Rome, Italy.

REVIEW EXPERIENCE

Journals:

IEEE Transactions on Robotics.

IEEE Robotics and Automation Magazine.

IEEE Transactions on Automatic Control.

IEEE Transactions on Control Systems Technology.

Conferences:

IEEE International Conference on Robotics and Automation (ICRA).

IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS).

TEACHING EXPERIENCE

- Head TA (Teaching Assistant) First Lego League, July 2008, at Georgia Institute of Technology (30 hours).
- 30 hours of the Automatic Regulation course in the 2nd year of the Industrial Electric Engineer in 2005-2006, University of Seville.
- 30 hours of the Basis of Computer Science in the 1st year of the Industrial Engineer in 2004-2005, University of Seville.

LANGUAGES

- Advanced level of English.
- Certificate in Advanced English (CAE) by the University of Cambridge (June 2006).
- TOEFL test with 253 points (March 2005).

EXTRACURRICULAR ACTIVITIES

- Volunteer in the Youth Association “Don Bosco” in Sanlucar la Mayor (Seville) during the period 1998-2006.

OTHER DETAILS OF INTEREST

- Member of the *Institute of Electrical and Electronics Engineers* (IEEE) and the *IEEE Robotics & Automation Society* since 2004.
- Member of the robotics association in the University of Seville from its origin in 2005.
- Evaluated as A with honors in COU (Training year for the university).
- High School Degree with Special Award.