

DETAILED CURRICULUM VITAE

Last Name : CHERUBINI First Name : Andrea
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1. Diplomas

Ph.D.(s) :

- Doctor of Philosophy (Area of Specialization : System Engineering), Dipartimento di Informatica e Sistemistica (D.I.S.) University of Rome “La Sapienza”, Italy, April 2008. Ph.D. dissertation : “Vision-based techniques for following paths with mobile robots”.

Other diplomas :

- Master of Science in Control Systems, University of Sheffield, United Kingdom. Final thesis : “Simulation and control of a walking humanoid with Matlab and Visual Nastran”, September 2003.
- Master of Science in Mechanical Engineering, University of Rome “La Sapienza”, Italy, July 2001.
- Baccalauréat Scientifique (mention très bien), Lycée Français International, Bethesda (MD), USA, June 1995.

2. Current Professional Status

Position and status : post-doctoral fellow at INRIA Lagadic group
Institution (city-country) : INRIA Rennes, FRANCE
Start : 15/03/2008

3. Training and Professional History

INSTITUTIONS French or foreign	POSITIONS AND STATUS (employee, fellow, etc.)	DATES		Remarks
		<i>Start</i>	<i>End</i>	
Lagadic Group	Postdoctoral Fellow	15/03/2008	currently	
D.I.S. “La Sapienza”	Engineer	01/12/2007	29/02/2008	
Lagadic Group	Invited Ph.D. Student	01/03/2007	31/10/2007	
D.I.S. “La Sapienza”	Ph.D. Student	01/11/2004	28/02/2007	D.I.S. Scholarship
D.I.S. “La Sapienza”	Engineer	01/04/2004	31/10/2004	
University of Sheffield, U.K.	Master Student	15/09/2002	15/09/2003	Two Scholarships
Italian Government	Civil Service	1/09/2001	01/07/2002	
D.I.S. “La Sapienza”	Master Student	01/09/1995	15/07/2001	

4. Prizes and awards

- United Kingdom E.P.S.R.C. Scholarship covering the fees for the Master of Science in Control Systems, University of Sheffield.
- “La Sapienza” Scholarship for research in foreign institutions, 2002-2003.
- “La Sapienza” three year Ph.D. Scholarship, 2004-2007.

5. Publications

Publications are available online at :www.irisa.fr/lagadic/publi/author/Andrea.Cherubini-eng.html.

6. Technology development : software or other

Within the ASPICE project, I have developed the AIBO Driver (ASPICE Project deliverable, 2006). This software (10000 lines of code) is utilized to control the behavior of the Sony AIBO Robot from a remote console with various input devices. With the AIBO driver, it is possible to activate the video stream from the AIBO camera, and the robot communication, and to control the robot mobility using three different autonomy modes. The driver has been successfully integrated in the ASPICE framework, and is used for rehabilitation purposes. At “La Sapienza”, I have also contributed to the SPQR Robocup Legged 2006 code. At Lagadic, I have contributed to CycabTk, a software developed for French project Cycab, to ViSP, the Visual Servoing Platform developed by the Lagadic group, and to CityVIP (CityVIP Project deliverable, due in 2011). In CycabTk, I have implemented two visual path following controllers, and I have improved the existing visual navigation controller. In ViSP, I have implemented a visual path tracker. In CityVIP (4000 lines of code), I have implemented various strategies for visual navigation within obstacles. This work is outlined at : www.irisa.fr/lagadic/demo/demo-cycab-vis-navigation/vis-navigation.

7. Technology transfer of research results

The ASPICE Framework has been validated in a rehabilitation program, and is currently available for use at Fondazione Santa Lucia in Rome. My contribution to SPQR is also public, and available at : www.dis.uniroma1.it/~spqr/download/SPQRLegged2006.tgz. The ViSP software is distributed for free under the terms of the QPL License, and is used by approximately 100 users worldwide.

8. Supervision of research activities

In 2006, I directed the work (12 months) of engineer Francesco Macrí, on the image processing aspects of the ASPICE project. During my stay at “La Sapienza”, I also was a supervisor of two master students (8 months each), and a bachelor student (3 months), in Electrical Engineering :

- Sandro Bruscano, master, “ASPICE : a robotic system for patients mobility increase”, University of Rome “La Sapienza”, 2005. This work concerned the design and implementation of assistive robotic system ASPICE. The results have been presented at the IEEE/RAS-EMBS International Conference on Biomedical Robotics and Biomechanics, 2006 (Cincotti et al., 2006).
- Manuel Colafrancesco, master, “Mobile robot visual navigation based on an image database”, University of Rome “La Sapienza”, 2008. The goal of this work was to compare and validate various controllers for robot visual navigation. The work has been presented at the ICRA Workshop on safe navigation in open and dynamic environments, 2009 (Cherubini et al., 2009).
- Federico Berti, bachelor, “Nonholonomic motion planning based on harmonic potential fields”, University of Rome “La Sapienza”, 2007. In this work, a motion planner for nonholonomic navigation has been designed and validated in simulations. Obstacles are avoided by using harmonic potential fields.

At “La Sapienza”, I have also co-supervised two master students : Theodora Capeqi in 2006 (robot vision), and Marcello Lombardo in 2008 (humanoid locomotion). I have also supervised the project works (1 month each) of three Adaptive Systems (Master in Electrical Engineering and Systems Engineering) course students, and of three Machine Learning (Master in Computer Engineering) course students.

9. Teaching

In the last four years I have taught :

- 12 hours of Adaptive Systems lectures (Master in Electrical Engineering and Systems Engineering - fifth year) at “La Sapienza” (years 2006 - 2008) ;
- 8 hours of Machine Learning lectures (Master in Computer Engineering - fifth year) at “La Sapienza” (years 2006 - 2008) ;
- 72 hours of Control System laboratory assignments (Master in Mechanical and Control Systems Engineering - fourth year, and Master in Material Science and Nanotechnology - fourth year) at the Institut National des Sciences Appliquées - INSA, Rennes (2009). This included preparation, supervision and correction of laboratory assignments, for a class of approximately 40 students.

10. Dissemination of scientific knowledge

Reports about my work in ASPICE have appeared on the Italian public TV and on Italian newspaper “Il sole 24 ore”. My work with the Robocup team SPQR (2004-2006) has been reported on Italian TV and press in various occasions. In 2007, I was interviewed by the French magazine “Sciences Ouest”. A press review of the above is available at : www.dis.uniroma1.it/~labrob/people/cherubini/index.php?id=9.

11. Collaborations, visits

After obtaining my master in Mechanical Engineering at Rome, I completed a second master in Control Systems at the University of Sheffield, United Kingdom (September 2002 to September 2003). Within the ASPICE Project, I collaborated with the Clinical Neurophysiopathology Laboratory of the Fondazione Santa Lucia IRCCS in Rome, a renowned center for neuromotor rehabilitation. I have taken part in the Four-Legged Robocup League competition, from 2004 to 2006, as a member of the “Sapienza” team SPQR. In 2007, during the third year of my Ph.D., I had the opportunity to pursue my doctoral research for 8 months in France at the Rennes-based Lagadic Research Group. As part of my current postdoc at Lagadic (within the ANR Tosa CityVIP project) I am collaborating with many leading French robotic research groups.

12. Invited seminars

- French CNRS Groupe de Recherche Robotique, Paris, France, June 2007 ;
- Institute of Automation (IAT), Universität Bremen, Germany, December 2007 ;
- Royal Institute of Technology (KTH), Stockholm, Sweden, December 2007 ;
- UTC - Université de Technologie de Compiègne, France, December 2009.

13. Responsibilities

In the past four years I have reviewed over 30 articles for international conferences IEEE ICRA (2007, 2009, 2010 and 2011), IEEE/RSJ IROS (2006, 2007, 2009 and 2010), Robocup Symposium (2008 and 2009), and ICAR (2009), as well as for international journals IEEE Trans. Robotics (2009 and 2010), Robotics and Autonomous Systems (2006 and 2010), Journal of Intelligent and Robotic Systems (2010), and IEEE Trans. Control Systems Technology (2007). I have also chaired the session “Nonholonomic Motion Planning” at the IEEE/RSJ International Conference on Intelligent Robots and Systems, IROS 2008. I have contributed to the periodic reports of projects ASPICE, SPQR, and CityVIP.

14. Miscellaneous

My research interests include visual servoing for mobile robotic applications, nonholonomic robot navigation, legged locomotion, and evolutionary robotics. Throughout my career, my work was funded through various research fellowships. In 2001-2002 I served the Italian civil service. As well as having relevant knowledge and experience, I believe I have excellent communication and organizational skills. During my Ph.D. and Postdoc, I enhanced my ability to present results and data in a clear and concise manner. I am conversant in Italian (native speaker), English, French, and Spanish ; languages which I am able to speak and read. The fact that I have spent over half of my life outside Italy (in the U.K., U.S.A., France, and Ecuador), and hence that I pursued my studies along four different educational models, has cultivated in me an open mind attitude and working flexibility.