

WORK EXPERIENCE

Research Assistant

Artificial Intelligence laboratory, Massachusetts Institute of Technology, Cambridge and Massachusetts General Hospital, NMR Center, Boston (MA)

Currently conducting research on Diffuse Optical Tomography (DOT). This non-invasive metabolic-imaging technique will lead us to an improved understanding of the brain activation and functionality and ultimately it will contribute to the diagnosis, treatment and prevention of mental illness and neural disorders

Teaching Assistant

Artificial Intelligence laboratory, Massachusetts Institute of Technology, Cambridge (MA)

- o Math Instructor for Women's Technology Program (MIT summer program), 2006

Department of Computer Science, University of Genoa, Italy

- o HTML class, 2001
- o Assistant in "Introduction to Information Technology" class, 2001
- o Freshmen tutor for the Academic year 1999 – 2000
- o Formula 2000 (orientation event): mentor for the prospective students in the Department of Computer Science (fall 2000)

Short Projects

Department of Electrical Engineer and Computer Science, Laboratory for Integrated Advanced Robotics, University of Genoa, Italy

- o Implementation of a simpler arm controller to generate basic Babybot arm movements
- o Implementation of a richer library of Babybot arm movements using an accurate method to generate trajectories

Artificial Intelligence laboratory, Massachusetts Institute of Technology, Cambridge (MA)

- o Simulation of bacteria behavior: reproduction and evolution (best fit selection)
- o Simulation of ant colony to study constructive outcome of a random behavior (Lego robot design and implementation)

Department of Computer Science, University of Genoa, Italy

- o Control unit design and simulation (programming in VHDL)
- o Compiler for NFL imperative language (programming in C)
- o Videogame on the web (programming in HTML, applet and Java script)
- o Graphic driver for the kernel of Minix Operative System
- o Vehicle business Data Base design and implementation (programming in SQL and using Access)
- o 3D multifunctional graphic interface (programming in C, using Xform and OpenGL)
- o Astronomical images in the thermal Infra Red simulator programming in IDL and Matlab)
- o Multifunctional 8 bits timer design and implementation (programming in Oracle and Palasm)
- o Stereo vision system: 3D visualization (programming in C++ and VRML)

EDUCATION

Massachusetts Institute of Technology (Cambridge, MA) 09/2001 – present
Ph.D. candidate in Computer Science (GPA 4.5 of 5.0)

Space Telescope Science Institute (J. Hopkins, MD) 02/2001 – 04/2001
Research for post Master Thesis *full three-month fellowship*

Massachusetts Institute of Technology (Cambridge, MA) 07/2000 – 09/2000
Research in Center for Biological and Computational Learning in genome selection (summer student) *full two-month fellowship*

Department of Computer Science, University of Genoa, Italy 07/2000
Master of Science *magna cum laude* in Computer Science

Space Telescope Science Institute (J. Hopkins, MD) 11/1999 – 02/2000
Research for Master's Thesis *full three-month fellowship*

Liceo Classico C. Colombo (Genoa, Italy) 07/1995
Diploma di maturita Classica (high school) *magna cum laude*

Publications and presentations

- "Combined Optical and Magnetic Functional Brain Imaging", Human Brain Mapping, 2/2006
- "Effective scattering coefficient of a void space", Applied Optics, 2006
- "Functional Brain Imaging combining DOI and fMRI", CSAIL medical-vision group
- "Comparison of Diffusion and Transport in human head", Optical Society of America - BioMed 4/2004
- "Depth of arterial oscillation resolved with NIRS time and frequency domain", OSA - BioMed 4/2004
- "The Orion Nebula in the mid-infrared", The Astronomical Journal, 3/2005
- "A Fourier-based method for the restoration of chopped and nodded images" [A&A], Genoa 5/2003
- "Mid-IR emission of circumstellar disks in the Orion Nebula", Munich 4/2001
- "Infrared image restoration in specific environment" [M.S. thesis], Genoa 7/2000

HONORS AND AWARDS

- Summer internship at Sensory and Cognitive Food Science Laboratory at the National Food Research Institute of Tsukuba, Japan, 2007
- Summer internship at Laboratory for Integrated Advanced Robotics, University of Genoa, Italy, 2005
- Five year grant from National Institute of Health for research in Diffuse Optical Tomography, 2003 - 2008
- Graduate Summer School at Institute for Pure and Applied Mathematics, UCLA (CA), on Mathematics in Brain Imaging, 2004
- Full financial support from Institute for Pure and Applied Mathematics, UCLA (CA), for the Inverse Problems Workshop Series, 2003
- One year fellowship offered by *Nippon Telegraph and Telephone Corporation* at MIT, 2001 - 2002
- Full financial support from the Department of Electrical Engineering and Computer Science at MIT, 2001 - present
- Full financial support from Max Planck Institute für Astronomy (Heidelberg, Germany) for data acquisition at the United Kingdom Infrared Telescope (Mauna Kea, Hawaii, USA), 12/1999

LANGUAGES

Fluent English. Spoken Spanish. Native Italian

OTHER EXPERIENCES AND PERSONAL INTERESTS

- MIT Graduate Student Council Activities Committee Chair, 2/2005 – 5/2006
- Commodore of the MIT yacht club (MIT Nautical Association), 12/2002 – 11/2004
- President (4/2004 – 2/2005) and Treasurer (1/2003 – 4/2004) of the MIT Italian Club (MITaly)
- President (5/2004 – present) and Vice President (3/2003 – 5/2004) of the MIT Argentine Tango Club
- Volunteer nurse assistant in Matiri (Kenya, Africa), 07/2001

- Research interests include machine learning, neural networks, inverse problems and regularization theory
- Other interests include competitive sailing and sailing instructing, competitive ice hockey, coxswain and tango dancing