

## CURRICULUM VITAE

**Name:** Ettore  
**Surname:** Ferranti  
**Date of Birth:** ON REQUEST  
**Nationality:** Italian  
**Address:** ON REQUEST  
**E-mail:** ON REQUEST  
**Website:** <http://web.comlab.ox.ac.uk/oucl/people/ettore.ferranti.html>  
**Mobile:** ON REQUEST

### Education/Qualifications

- 04/06-now *DPhil student at the Computing Laboratory, University of Oxford, United Kingdom. Member of New College.*  
Supervisor: Dr. Niki Trigoni.  
Estimated ending data: June 2009.
- 10/03-12/05 *MSc Advanced Computer Engineering (Laurea Specialistica), Faculty of Engineering, University of Bologna, Italy; with Distinction (7 people graduated in 2005 out of 250 who started the bachelor degree in 2000. Only 4 of them graduated with Distinction). Grade: 110/110 cum laude.*  
*Thesis:* Distributed queries on heterogeneous collections of multimedia data.  
*Supervisor:* Prof. Paolo Ciaccia.
- 09/00-10/03 *BSc Computer Engineering, Faculty of Engineering, University of Bologna, Italy; first class. Grade: 110/110.*  
*Thesis:* Development of an xml-based graphic framework for Microsoft .Net environment.  
*Supervisor:* Prof. Giuseppe Bellavia.
- 07/00 *High School Diploma, Liceo Scientifico Leonardo da Vinci, Tolentino (MC), Italy; Grade: 100 (over 100).*

## Publications

- E. Ferranti, N. Trigoni and M. Levene. “**Rapid Exploration of Unknown Areas Through Dynamic Deployment of Mobile and Stationary Sensor Nodes**”. To be published in the Journal of Autonomous Agents and Multi-Agent Systems 2009 (DOI 10.1007/s10458-008-9075-4).
- E. Ferranti, N. Trigoni and M. Levene. “**HybridExploration: a Distributed Approach to Terrain Exploration using Mobile and Fixed Sensor Nodes**”. IROS2008, IEEE International Conference on Intelligent Robots and Systems 22-26 September 2008, Nice, France.
- E. Ferranti and N. Trigoni “**Robot-Assisted Discovery of Evacuation Routes in Emergency Scenarios**”. ICRA08, IEEE International Conference on Robotics and Automation 19-23 May 2008, Pasadena, CA, USA.
- E. Ferranti, N. Trigoni and M. Levene. “**Brick&Mortar: An On-Line Multi-Agent Exploration Algorithm**”. ICRA07, IEEE International Conference on Robotics and Automation 10-14 April 2007, Roma, Italy.

## Awards

- Brendan Murphy MSN Young Researcher's Award 2006 (Sponsored by Intel).
- Scholarship from the University of Bologna during BSc and MSc.
- Prize from the University of Bologna for excellent final grade with on time graduation for both BSc and MSc.

## Other Presentations

- E. Ferranti and N. Trigoni. “Robot-Assisted Discovery of Evacuation Routes in Emergency Scenarios”, presented in the Next-Generation Networking Workshop on Multi-Service Networks (MSN), 2008.
- E. Ferranti and N. Trigoni. “Multi-Agent Exploration of Unknown Terrains”, work-in-progress presented in the Next-Generation Networking Workshop on Multi-Service Networks (MSN), 2006 (awarded best presentation of the workshop).

## Professional Service

- Reviewer for IEEE International Conference on Robotics and Automation (ICRA09).
- Reviewer for IEEE International Conference on Pervasive Computing and Communications (PERCOM09)
- Reviewer for IEEE International Conference on Robotics and Automation (ICRA08).
- Reviewer for IEEE International Conference on Robotics and Automation (ICRA07).
- Reviewer for Int. Symp. on Personal Indoor and Mobile Radio Communications (PIMRC06).

## Work experience

- 11/08-03/09 *Internship at NEC European Research Laboratory, Heidelberg, Germany:*  
Research on P2PTV content distribution, within the NAPA-WINE European project.
- 04/06-now *DPhil student at the Computing Laboratory, University of Oxford, United Kingdom.*  
Member of the *Sensor Networks Research Group*, working in the general area of mobile sensor networks, with particular interest in distributed exploration and multiple agents collaboration.
- 09/06-now *Visiting researcher at University College London*  
Collaborations with the mobile research group (robotics and sensor networks projects).
- 01/06-04/06 *Visiting researcher at Birkbeck College, University of London*  
Robotics exploration (in collaboration with the London Knowledge Lab).
- 1999-2006 *IT technical collaborator.*  
Installation of digital printing systems on Macintosh and Windows environments; interfaces between existent systems and RIP (Raster Image Processor) systems; networks installation and security; expos and product demos organisation; board member.  
*Di.Co. srl, Viale delle Cartiere 1, I-62029 Tolentino (MC) Italy.*
- 09/04-12/05 *Teaching Assistant.*  
Lectures and laboratory exercises in Databases course (Sistemi Informativi L-A).  
Laboratory and server administrator (IBM DB2 UDB server).  
*Faculty of Engineering, University of Bologna, Italy.*
- 02/05-04/05 *Apprenticeship.*  
A study of techniques for the access of images databases using distributed ontologies: techniques of ontology mapping.  
*Faculty of Engineering, University of Bologna, Italy.*

## **Programming and Software Skills**

- Programming Languages: Java, Python, C++, C, C#, Prolog, Javascript, Matlab, Latex, UML.
- Query and Markup Languages: SQL, HTML, XML.
- Operating Systems: Mac OS X, \*NIX, Windows.
- Embedded OS: Contiki OS, TinyOS, Tmote Sky platform, Lego Mindstorm NXT platform, SRV1 Robotic Platform (Embedded C).

## **Other Skills**

- Business, sales and customer care skills acquired by a long standing collaboration with an Italian firm distributing and installing digital printing systems.
- Teamwork skills acquired during collaboration with different teams and research projects at the University of Oxford, University College London, NEC Research Laboratory and Birkbeck College, and by participating at the Microsoft Imagine Cup in 2004.
- Organisational skills acquired by acting as laboratory administrator for a Database Course.

## **Licenses**

- European driving license (cars, motorbikes).
- Full amateur radio license.
- Paragliding pilot license.

## **Languages**

- Italian: Mother tongue.
- English: International English Language Testing System (IELTS), Overall Score 8 (2005). Greatly improved during PhD and by living in London, currently fluent.
- German: Basic Level (currently attending a course in order to improve it)
- French: Basic Level.

## **Personal Interests**

- Photography.
- Travelling and motorcycle touring.
- Ham radio.
- Literature.
- Paragliding.
- Fly fishing.

## Research Interests

Recent advances in micro-electromechanical systems (MEMS) are allowing the deployment of small mobile nodes with sensing capabilities within an area for monitoring purposes. These nodes have processing and storage capabilities, and are able to communicate with each other through wireless multi-hop links. They have the potential of sensing the ambient environment, and collaborating with each other to detect high-level events of interest.

My research is focusing on sensor network and mobile robots deployment in an emergency scenario, which present critical requirements for reliable and real-time event detection. The objective is to explore a dangerous area after a disaster and gather information about hazards and victims, and to guide first responders to the latter avoiding the former.

The main challenges that will be addressed are i) to provide reliable detection of user-defined composite events, even in the presence of intermittent failures in the communication infrastructure and ii) to ensure immediate (real-time) reaction to high-level events by activating nearby sensors, communicating high-level events to interested parties, or raising alarms. At the implementation level, this project will involve evaluating distributed event detection techniques using simulation tools and a real sensor network platform.

The main research focus is in Mobile Sensor Networks, and specifically:

- Distributed Exploration and Mapping of Unknown Environments
- Swarming robots
- Distributed Localization
- Events Detection & Tracking
- Pathfinding
- Energy-Efficient Routing Protocols and Propagation Algorithms
- Distributed Databases