

## PhD Positions in Multimedia Signal Processing

*Instituto de Telecomunicações, Instituto Superior Técnico, Lisbon, Portugal*

**Project:** Visual sensor networks can be characterized by wireless battery-operated sensing nodes that are empowered with sight and are capable of complex visual analysis tasks. Since each node has severe energy constraints, it is imperative to optimize the computation, coding and communication of visual data. One promising approach is to reverse the conventional compress-then-analyze paradigm. In this case, image features are collected by sensing nodes, processed, and delivered to final destination(s) to enable higher level visual analysis tasks by means of either centralized or distributed classifiers.

The MSP (*Multimedia Signal Processing*) group participates in the GreenEyes (<http://www.greeneyesproject.eu/>) project, a European Union FP7 FET (*Future and Emerging Technologies*) project that tackles the encoding and transmission of visual features in resource constrained sensor networks. The positions available regard the development of novel feature coding schemes to support the joint analyze-and-compress paradigm in visual sensor networks and the demonstration and validation of the results achieved by means of a working prototype on a real wireless sensor node platform. In this context, the techniques for feature extraction and coding must support the energy and bandwidth constraints of the sensing nodes without a significant impact in terms of analysis task efficiency.

**Research grant:** The research grant is associated to a yearly renewable contract that includes an experimental period of 6 months. The research grant consists of a tax-free stipend of 1000€ per month for PhD positions. The candidates must fulfill the following conditions:

- Background on the relevant technical areas. Preference will be given to candidates that better understand visual compression, computer vision and information retrieval fields.
- Strong motivation to perform research and to participate in a rich and stimulating project as well as to advance state-of-the-art through the publication of results in international conferences and peer reviewed journals. In addition, the candidate should have good organizational skills and be able to work in a team.
- Fluent in English and with good skills in technical writing and presenting.
- Good programming skills (C/C++, Matlab, etc.) are required.

The selected candidate will be supervised by the following researchers: Prof. João Ascenso, Dr. Catarina Brites and Prof. Fernando Pereira (see <http://www.img.lx.it.pt/Staff.html> for details). The candidate will join a team of staff and PhD students where intense research and development activities in the image processing and coding fields are carried out.

To apply for the research grant, please submit your application at <https://itlisbon.recruiterbox.com/jobs/11034> with the following documents:

1. Detailed curriculum vitae with transcripts
2. A motivation letter (research statement) explaining your interest in the position
3. Recommendation letter(s)

**Applications shall be received no later than 15 July 2013.** Selected candidates will be interviewed. For any clarifications, please contact Prof. João Ascenso at [joao.ascenso@lx.it.pt](mailto:joao.ascenso@lx.it.pt).