

Dr. Maciel ZORTEA

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EDUCATION

Maciel Zortea was born in Nova Bassano, Brazil, on August 19, 1978. He received the Civil Engineer Degree at the Federal University of Rio Grande do Sul [www.ufgrs.br] in Porto Alegre, Brazil, where he studied from 1996 to 2002. He continued his studies at the Centre for Remote Sensing [www.ufgrs.br/srm], where he received a MSc. in Remote Sensing discussing the thesis "Investigation on methods for dimensionality reduction on hyperspectral image data", in 2004 (advisor Prof. Dr. Victor Haertel).

In 2004 he joined Prof. Dr. Sebastiano Serpico Image processing and Pattern Recognition Group (<http://spt.dibe.unige.it/IPRS>) at the Department of Biophysical and Electronic Engineering (DIBE), and received his Ph.D in "Information and Communication Science and Technologies curriculum in Space Science and Engineering" from the University of Genoa, Italy, in 2007, defending the thesis "Advanced pattern recognition techniques for environmental information extraction from remotely sensed data".

PRIVATE AND ACADEMIC WORK EXPERIENCE

- *ACROTEC S.R.L (Savona, Italy)* [www.acrotec.it]: he worked in collaboration to the development of a decision support system for real-time monitoring, forecasting and warning of meteo-hydrological risk events. The system integrates satellite, radar, and ground based data measurements, from 06/2007-08/2007 (2 months).
- *Dept. of Biophysical and Electronic Engineering, University of Genoa*, [www.dibe.unige.it]: he provided technical-scientific support in topics related with his doctoral thesis, collaborating in research projects like (a) "PRIN/COFIN" (data assimilation models for the estimation of the water balance at the soil surface), funded by the Italian Ministry of Education, University and Research (MIUR), and (b) the "Proscenio" program (for technological innovations on hydro-geological, hydraulic and fire risks assessment), funded by the Italian Department of Civil Protection, from 2004 to 2006 (36 months).
- *EngeLineas Projects and Consulting (Porto Alegre, Brazil)* [www.engelineas.com.br]: his work activities focused mainly on: (a) design of foundations for transmission line towers, and (b) reliability studies and analysis for reinforcement of existent transmission line structures, working during 2001 and 2002 (15 months).

CURRENT RESEARCH

At present, he holds an Marie Curie Experienced Researcher (ER) contract within the Hyperspectral Imaging Network [<http://hyperinet.eu>], and cooperates with the Neural Networks and Signal Processing Group (GRNPS) team at the Department of Technology of Computers and Communications, in Cáceres, Spain (Prof. Dr. Antonio Plaza).

His main current research activity is in the area of remote-sensing image processing and analysis, specifically focusing on:

- endmember extraction and spectral unmixing;
- hyperspectral image classification and feature reduction;
- contextual and ensemble methods for classification of remote-sensing images;
- geophysical parameter estimation from remotely sensed data;

He is a reviewer for the "IEEE Transactions on Geoscience and Remote Sensing," and the "International Journal of Remote Sensing."

His current published results in remote sensing topics include:

1. M. Zorteza, V. Haertel, R. Clarke, "Feature Extraction in Remote Sensing High-Dimensional Image Data," IEEE Geoscience and Remote Sensing Letters, Vol. 4, No. 1, pp. 107-111, 2007.
2. M. Zorteza, S. B. Serpico, "Investigation of an Ensemble Framework for Classification of Hyperspectral Remote Sensing Data with Nearly Equal Spectral Response Classes," Proc. of SPIE Europe Remote Sensing Symposium, Florence, Italy, 17-21 September 2007.
3. M. Zorteza, M. De Martino, S. B. Serpico, "A SVM Ensemble Approach for Spectral-Contextual Classification of Optical High Spatial Resolution Imagery," Proc. of IEEE International Geoscience and Remote Sensing Symposium 2007, Barcelona, Spain, 23-27 July 2007.
4. M. Zorteza, S. B. Serpico, "On Improving Global Estimation of Sea Surface Temperature from AVHRR Data Using Support Vector Machines," Proc. of IEEE Gold Conference on Remote Sensing 2006, Bari, Italy, 4-5 December 2006.
5. S. B. Serpico, M. De Martino, G. Moser, M. Zorteza, "Land Surface Temperature Estimation from Infrared Satellite Data using Support Vector Machines," Proc. of IEEE International Geoscience and Remote Sensing Symposium 2006, Denver, USA, 31 July-4 August 2006.
6. M. Zorteza, V. Haertel, "Experiments on Feature Extraction in Remotely Sensed Hyperspectral Image Data," Proc. of IEEE International Geoscience and Remote Sensing Symposium 2004, Alaska, USA, 20-24 September 2004.

Last update: XVI-V-MMVIII