

Career Development Plan-Year 1 (second stage, 2 years)

Name of fellow: Yuliya Tarabalka

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Name of Supervisor: Jón Atli Benediktsson

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BRIEF OVERVIEW OF RESEARCH PROJECT AND MAJOR ACCOMPLISHMENTS EXPECTED:

The project “Spectro-spatial classification in hyperspectral imagery” deals with the definition and implementation of advanced algorithms for the segmentation and classification of hyperspectral data. New algorithms will be developed incorporating the spectral information, which characterizes the physical nature of the materials, and the spatial information about the objects (shape description or texture). Improved classification performances are expected from this joint use. Key scientific issues include feature extraction, dimension reduction and data fusion. This work follows previous successful studies on hyperspectral data from urban areas.

The fellow is expected to be co-author of 2-4 journal or conference papers. Furthermore it is a goal for the fellow to be lead author, alternatively one of the lead authors, of at least one paper in order to gain experience with preparation of a manuscript.

LONG-TERM CAREER OBJECTIVES (over 5 years):

1. Goals:
 - Complete a PhD
 - Do postdoctoral research towards qualifying for a junior faculty position at a university
2. What further research activity or other training is needed to attain these goals?
 - To conduct research of good quality, truly worthy of publication
 - Good supervision and mentoring
 - Training in scientific writing and presentation

SHORT-TERM OBJECTIVES (For the 2 years in the UoI):

1. Research results
 - o Anticipated publications:
 - 2-4 papers on hyperspectral image processing, related to the questions of hyperspectral image classification and analysis

- Anticipated conference, workshop attendance, courses, and /or seminar presentations:
 - IGARSS 2008, Boston
 - Summer school in Grenoble (on very high resolution remote sensing), 2008
 - Hyper-I-Net summer school, Wageningen University (WUR), 2008
 - IGARSS 2009
 - Hyper-I-Net summer school in 2009
 - “Digital Image Processing”, “Introduction to Research Studies and the Scientific Community” and “Icelandic Language” courses in the UoI

- 2. Research Skills and techniques:
 - General knowledge in image processing and segmentation
 - Methods and algorithms for the segmentation and classification of hyperspectral data
 - Advanced techniques for the hyperspectral image analysis

- 3. Research management:
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- 4. Communication skills:
 - Manuscript writing
 - Presentation of own work at conferences and summer schools
 - ESR/ER representative in the HYPER-i-NET Management Board

- 5. Other professional training (course work, teaching activity):
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- 6. Anticipated networking opportunities
 - Conferences attendance
 - Participation in HYPER-i-NET activities
 - Collaboration and common scientific papers with remote sensing group at INPG, Grenoble, France

- 7. Other activities (community, etc) with professional relevance:
 - Student Member of IEEE (Institute of Electrical and Electronics Engineers, Inc.), Student Member, IEEE Geoscience and Remote Sensing Society and Student Member, IEEE Women In Engineering. Participation in the activities of the IEEE Icelandic Section
 - Reviewer for the IGARSS 2008, *IEEE Transactions on Geoscience and Remote Sensing* and EUSIPCO 2008

Date & Signature of fellow:

Date & Signature of supervisor