



# WT2.18.: University of Granada, Granada, Spain (UG)

## Report

Activities performed during the visit

in University of Granada, SPAIN

period: 9-11-2014 -12-11-2014

author: Michał Woźniak



## Personal Information

Mr./Ms. Michał Woźniak, faculty member of Wrocław University of Technology visited

(name of sending institution, country)

in the period from 09.11.2014 to 12.11.2014 in University of Salamanca, Department  
Computer Science and Artificial Intelligence, Granada, Spain

(name of the visited institution, country)

order to carry out research and training activities in the field of machine learning.

(give the area)

## Information about Seminars

The seminar presentation was organized on ...11-11-2014

the date

It was entitled:

*Chosen issues on data stream classification*



## Description of scientific activities

(Please describe value added to the ENGINE project i.e. new knowledge, new skills with respect to the objectives of the project, the assigned common area of future cooperation with the partner, plans for common research, projects, publications and how it could be used in the scope of ENGINE)

During my stay in University of Granada I had many opportunities to talk with the researchers from Group SCI2S (Soft Computing and Intelligent Information Systems), the Department Computer Science and Artificial Intelligence from University of Granada, as Prof. Francisco Herrera (team leader), Dr. Salvador García, Dr. José Antonio Sáez, Ms. Sara del Rio.

During the stay several informal, bilaterally talks took place and 3 group discussion as well.

I have learned a new knowledge related to:

- Group SCI<sup>2</sup>S group's research on instance selection, learning set filtering, and big data analytics.
- Research projects currently realized by Group SCI<sup>2</sup>S.
- Academic system in Spain including activities like research and teaching.
- Organization of PhD studies in University of Salamanca.

We also have talk about our common research, particularly on:

- The improvements required by the reviewers of our common paper "On the Usefulness of One-Class Classifier Ensembles for Decomposition of Multi-Class Problems" submitted to Pattern Recognition journal (Elsevier).
- Progress of the work on the paper entitled "Dynamic Classifier Selection for Decomposition of Multi-Class Problems with One-Class Classifiers (authors: Bartosz Krawczyk, Mikel Galar, Michał Woźniak, Francisco Herrera) which will be submitted to IEEE TRANSACTIONS ON NEURAL NETWORKS AND LEARNING SYSTEMS this year.
- Presentation of our paper accepted for presentation during IEEE SSCI conference (December 2014) entitled "Weighted One Class Classification for Different Types of Minority Class Examples in Imbalanced Data".

Additionally we agreed, that Dr. José Antonio Sáez will be employed as the postdoc in the ENGINE Center. We discussed the scope of his work - he will mainly focus on the following problems: learning set filtering, intelligent data decomposition for big data analytics and proposing new method of classifier evaluation.

During the stay I presented the seminar entitled *Chosen issues on data stream classification*, where the state of art of the data stream classification was presented and several method related to this topic, developed in Prof. Wozniak's team were presented as well.

The very important topic of the common discussions was the progress of the work of Mr. Bartosz Krawczyk (PhD student of Prof. Wozniak), who has been spending the middle-term visit in Prof. Herrera group (it is the second visit of Mr. Krawczyk in Granada University). Prof. Herrera, who is also co-supervisor of Mr.Krawczyk PhD thesis, is very glad about his work and agreed to invite Mr. Krawczyk for the next middle-term visit in 2015.



I believe that my stay in University of Granada will boost collaboration with Prof. Herrera that will trigger transfer of know-how and expertise and also extend of the network of contacts with the persons working on machine learning.

## Information referring to the intellectual property

(the generally binding law in this area in the visited country and procedures of patenting);

This issue will be described by Mr. Bartosz Krawczyk in his report, who is currently in University of Granada (the middle-term visit).

## Description of the cooperation between universities and industry

(how it is organized in partner's organization, the sources of funding, the opinions about drawbacks and strengths of existing solution).

This issue will be described by Mr. Bartosz Krawczyk in his report, who is currently in University of Granada (the middle-term visit).

## Other activities

Moreover we discussed several organization issues.

- We talk about the organizing the Workshop on Nonstationary Models of Pattern Recognition and Classifier Combinations (WT3.7) during the ICCS 2015 conference. Prof. Herrero accepted the invitation to join Program Committee and declared help in the workshop dissemination.
- We discussed on organization of the Workshop on Machine Learning in Life Sciences. (WT3.8) Prof. Herrera backed our proposal submitted to organizers of BigDataSE 2015 (he is the chair of the conference and has a very good relation with the workshop chair Prof. María José del Jesus).
- We talk on the possibility of organizing the common summer school on Machine Learning which could be organized under the framework of the ENGINE project. We agree on its tentative program and line-up of the possible lecturers. One of them could be Prof. Herrera.
- Additionally we talk on the future collaboration and activities under the ENGINE project. We agree that 2 persons from Granada University will visit WrUT in May/June.

**REMARK:** Apart from this information also a program of the visit and the presentation in electronic version should be given to the project office (please send all of them to Urszula.Markowska-Kaczmar@pwr.wroc.pl). Please respond to the points 1-5 for outgoing visit and points 1-3 for incoming visit. Point 6 is for extra activities that are not put in points 1-5.

