



WT2.17: The Information Technologies Institute, Thessaloniki, Greece

Report

Activities performed during the visit

in Wrocław, POLAND

period: 29th February 2016 - 3rd March 2016

author: Anastasia Moumtzidou



Personal Information

Ms. Anastasia Moutzidou, faculty member of Information Technologies Institute, Centre for Research and Technology Hellas (ITI-CERTH), Greece visited Wrocław University of Technology, Poland in the period from 29-2-2016 to 3-3-2016 in order to carry out research and training activities in the field of image analysis and in particular to discuss on the progress of our work regard patent image segmentation and other methodologies that can be used to attack the problem.

machine vision, multimedia analysis and retrieval and semantic web technologies and finally in order.

Information about Seminars

The seminar presentation was organized on Tuesday, March 1, 2016. It was entitled: “MKLAB-ITI Recent activities - multimodal data analytics and applications”. The aim of the seminar is to present CERTH's role in MULTISENSOR, hackAIR European projects, which are currently running projects, and to present VERGE multimedia search engine.

Description of scientific activities

The main aim of the visit was to make progress related to patent image segmentation. During the period since the previous visit, the WrUT studied a methodology for segmentation based on connected component analysis. The method was tuned using some intuitive and empirical rules



in order to handle efficiently the patent images. The method was tested on a significant number of images provided as dataset by ITI during the previous meeting.

ITI has started but not completed its work on patent segmentation using another approach called Infomap which is a known graph-based method. However, the results retrieved at this stage were not satisfactory but given that this method was not fully developed, its evaluation will be completed at a later stage.

The first introductory meeting was held on the first day of the visit (29.02.2016). The participants of the meeting were: A. Moumtzidou and J. Sas. The aim of the meeting was for the participants to inform one another regarding their progress on the patent page segmentation work, to discuss the problems that arose during the implementation/ evaluation of their methods, to propose possible solutions, and to elaborate the strategy of a hybrid approach. Finally, an outline of a common paper related to patent image segmentation was discussed.

The second meeting was scheduled for the second day of the visit (01.03.2016). The participants were workers of Department of Computational Intelligence, WrUT and specifically M. Przewoźniczek and M. Joachimiak, both working in the area of image and video analysis. The presenter was M. Przewoźniczek and the presentation was industry oriented. Specifically, M. Przewoźniczek did a presentation of his industry-related achievements focused on developing innovative vision algorithms used for quality control during the production of a product in a company (e.g. pharmaceutical companies). These algorithms are tuned for each use case/ industry application. Usual difficulties and problems that arose during the development of the methods were mentioned, as well as experience was exchanged on this matter.

The third meeting was scheduled for the third day of the visit (02.03.2016). The participants were M. Joachimiak and postgraduate students of the Department of Computational Intelligence. M. Joachimiak presented his PhD work on 3D video processing, involving his work on 3D video streaming, 3D video acquisition systems and finally video denoising. Moreover, a master thesis was presented regarding autonomous drone landing in a potential safe place. The main issues that need to be dealt is the fast and on-the-fly recognition of the environment given that the drone needs to be aware of its location in the indoor environment at all times. In the sequel, M. Joachimiak presented his current work on 3D video processing and compression. The topics that were discussed involve: depth estimation via stereo matching, asymmetric quality of 3D video, mixed resolution 3D video coding, methods for upsampling after having done downsampling during compression and finally foveated video compression given that is based on the fact that the peripheral human vision is reduced compared to central vision. Moreover, a tour was organized by M. Joachimiak regarding his current activities on gaze recognition and a real-time presentation/ testing was realized as well.



In the end of the day, a plan was made and agreed with Polish partner in order to organize the work to be done and eventually meet the goals set for the ENGINE project. These goals are organized per month until end of June.

1. 31th of March
 - ITI: finish with evaluation of techniques for patent segmentation including Infomap, SOM
 - WrUT: handle problem of near duplicate captions that are not recognized by using pattern matching techniques
2. 30th of April
 - ITI & WrUT: start with setting up the paper for patent image segmentation. Specifically, start with the introduction and Relevant works sections for the methods that will be evaluated eventually
3. 31th of Mai
 - ITI & WrUT: set and complete the set of experiments for the methods described in the paper.
4. 30th of June
 - ITI & WrUT: have a complete version of the paper in order to ready for publication in a relevant journal or conference.

Information referring to the intellectual property

This topic was subject to the previous visit in 2014 and this time it was not being considered.

Description of the cooperation between universities and industry

NA

Other activities

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.

