

WT2.6: European Centre for Soft Computing

Report

Activities performed during the visit

in European Centre for Soft Computing

period: 30.05.2015 - 21.06.2015

author: Tomasz Kajdanowicz





Personal Information

Mr./Ms. Tomasz Kajdanowicz faculty member of Wrocław University of Technology visited European Center for Soft Computing in the period from 30.05.2015 to 21.06.2015 in order to carry out research and training activities in the field of machine learning, network analysis and data science.

Information about Seminars

The seminar presentation was organized on 04.06.2015

It was entitled: Relational Classification using Random Walks in Graphs

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)

- Joint work on key variable detection in system dynamics framework based on multiplex
- Establishment of research line related to random walks methods in relational classification

Brief summary:

Building a business dynamic model that lays out the critical resources of the scenario and the key relationships between them offers a competitive gain for decision makers. This kind of modelling also provides a way to carry out simulations and understand the effects of the different policies. Among other methodologies, system dynamics (SD) presents a theoretical



framework with a set of tools and techniques for developing mathematical models of complex systems for social and economic scenarios. Crucial profile of the methodology lies in the fact that complex networks are a methodology using to encode the system.

However, it is sometimes difficult to identify key variables in dense or large problems modelled by SD. These key variables are those able to generate significant changes in the whole system. This descriptive information of the system is vital for modellers since they can apply strategic actions over those variables (in a direct or indirect way) and focus their what-if scenarios. The identification of these key variables is also useful for understanding the dynamics of the model and for validation purposes.

We can define a key variable in a SD model as a variable that is able to generate significant changes in the whole system. Then, the goal of this work is to automatically detect which variables constitute the set of key variables.

It was agreed that there will be developed a research on key variable detection in system dynamics framework. The first collaborative research outcome with the proposal of the variable derivation method will be submitted to the one of the best network's conference.

Information referring to the intellectual property

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

Intellectual property management in Spain is usually accomplished by Knowledge and Technology Transfer at university. The interesting part of IP related issues is different from Polish procedure of patenting.

- General patenting procedure:
 - patent examiners check if invention meets the following criteria:
 - novelty
 - inventive step
 - industrial applicability
 - Steps:
 - Preliminary examination of the application
 - by application documents and paying the application fee
 - documents examined for compliance with formal requirements; check the application for obvious bars to patentability; it is classified as invention according to the technical field using the International Patent Classification
 - Request for examination
 - request for examination fee EUR 350
 - seven years from the filing date to file the examination request
 - Publication of the application
 - application kept secret for 18 months and then is published
 - Official communications (office actions)



- patent examiner determines the state of the art relevant for invention and examine whether a patent can be granted against this background
- if the patent examiner finds that invention is new, involves an inventive step and is suitable for industrial application, and if application complies with all other formal requirements, the patent is issued
- if invention does not meet the requirements or if application has other defects, the patent examiner sends an official communication informing of any deficiencies
- opportunity to respond within in a time limit fixed in the communication and to remedy deficiencies
- Grant
 - if the result of the examination is positive, a patent is issued; in analogy to the publication of the application, a notice of grant will be published in the relevant part of the patent gazette
- Opposition
 - Anybody can oppose the grant of a patent within nine months from the publication of the patent specification; if not patent becomes legally valid up to 20 years.
 - If opposed, the patent will be either revoked or maintained as granted or in an amended form of more limited scope.
 - Appeals against decisions in opposition procedures can be lodged at the Federal Patent Court.
- Other tasks of Knowledge and Technology Transfer:
 - Invention and patent exploitation,
 - knowledge transfer (regional SME),
 - coordination of KT networks,
 - start-up support,
 - research promotion.

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).

- European Centre for Soft Computing continuously offers consultancy-like research model for collaboration with business partners
- No spin-offs since it was established



Other activities

N/A

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.

