

WT2.10: ESIGETEL, Ecole Supérieure d'Ingénieurs en Informatique et Génie des Télécommunications, France

Report

Activities performed during the visit

in **ESIGETEL Villejuif - Paris, FRANCE**

period: **6-11-2014 - 11-11-2014**

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Personal Information

Mr. Andrzej Żołnierek, faculty member of Wrocław University of Technology, Poland visited

(name of sending institution, country)

in the period from 06.11.2014 to 11.11.2014 in ESIGETEL, Ecole d'Ingenieurs en Informatique et Genie des Telecommunications, Vielljuif, France

(name of the visited institution, country)

order to carry out research and training activities in the field of pattern recognition.

(give the area)

Information about Seminars

The seminar presentation was organized on

07-11-2014

the date

It was entitled:

Applications of rough sets in pattern recognition



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 ESIGETEL, Ecole d'Ingenieurs en Informatique et Genie des Telecommunications, Vielljuif, France I have many opportunities to talk with the researchers from the ESIGETEL and EFREI (another Ecole d'Ingenieur situated at the same campus), as Dr. Catherine Marechal (chef of the industrial projects at ESIGETEL), Dr. Lamine Bougueroua (supervisor of apprenticeship courses Astra at ESIGETEL and Dr. Benoit Charroux from EFREI).

I learned a new knowledge related to:

- Research project currently realized by ESIGETEL: Analyzing Twitter's messages to predict epidemic (flu) spread (comparison with Sentinelle database used in France)..
- Academic system in France including activates like research and teaching and the system of professional internships for students.
- Organization of PhD studies in ESIGETEL in cooperation with Mines ParisTech (l'Ecole des Mines de Paris).
- Information referring to the intellectual property in France.
- Cooperation between universities and SME in France.

The main topic of the talks and discussions was application of rough set methods in the recognition.

After my seminar, we decided with Prof. Węgrzyn-Wolska to start the work on the problem how to apply this methodology to project: Analyzing Twitter's messages to predict epidemic (flu)spread. First off all during organized brainstorm meetings with the group of Prof. Węgrzyn –Wolska we discussed about formulation of the recognition task in this case. Moreover the staff of ESIGETEL presented collected data and results of already applied analysis. So-far proposed solutions were based on the text analysis, n-grams techniques and fuzzy approach. Then we discussed about necessary statistical investigations in this case and finally of the possibilities of applications of rough sets methodology to this problem. At the end of my stay we discussed of technical possibilities how to collect the tweets using software tools developed by ESIGETEL based on Twitter Rest API and how we can share these data and exchange the results of our cooperation.

During my visit at ESIGETEL we were discussing on above mentioned problems and agreed that we will try to employ several methods already developed in Wrocław University of Technology to compare already obtained results. We hope that thanks this initiative we will boost the cooperation between WUT and ESIGETEL. We are going to write at least one common paper next year which will be submitted to CORES conference (if we get the valuable results in February) or Medical Informatics and Technology (October 2015). If the results are promising then we will consider possibility to write the common grant proposal.





I believe that my stay in ESIGETEL in Villejuif will boost collaboration with Prof. Węgrzyn – Wolska that will trigger transfer of know-how and expertise and also extend of the network of contacts with the persons working on pattern recognition systems. The first short term goal is to work on classification of tweets for certain topic and next write a common publication on this research.

During my stay in ESIGETEL I had also the possibilities to get following information that Esigetel is a **member of the “Conference des Grandes Ecoles”** (CGE) and have been approved by the “Commission des Titres d’Ingénieur”, the only official accrediting body in France, to award Master of Engineering degrees.

In France, there are about 240 selective engineering schools called “Grandes Ecoles d’Ingénieur”. These usually small scale institutions are distinguished for their selective admission process, their small class sizes, their high teaching standards and the quality of their faculty selected from academic as well as professional backgrounds.

French engineering schools are accredited to deliver the “Diplôme d’Ingénieur”. This national master’s degree, which is recognized by French Ministry of Higher Education and Research, is the most highly regarded degree in engineering; it is accredited by the “Commission des Titres d’Ingénieur” (CTI), the only French engineering accrediting organization. The CTI delivers 3 levels of accreditation (1 year, 3 years and 6 years). **The engineering program offered by ESIGETEL has been accredited for 6 years.**

French engineering education is recognized around the world for its diversity and richness, and for its ability to produce **highly competent engineers**.

Specific Features of the French “Diplôme d’ingénieur”:

French engineering degrees contain advanced mathematics and include high-level theoretical teaching.

Practical applications are addressed separately in small tutorial sessions, workshops and through real-world experience.

Paid internships are an integral part of the programs.

French engineering programs emphasize knowledge of the business world and the study of foreign languages.

Whether in French or in English, students are asked to demonstrate their ability to think critically and to communicate effectively in speaking and in writing.

Information referring to the intellectual property

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

In France innovations, as well as being a way for companies to become more competitive and capture new markets, are also intellectual assets that must be protected. France’s **intellectual property code** protects business assets in the field of innovation and intellectual property.



The French Intellectual Property Code (French: Code de la propriété intellectuelle), is a corpus of law relating to intellectual and industrial property. It was formalised by Law No 92-597 of 1 July 1992, replacing earlier laws relating to industrial property and artistic and literary property.

To **protect innovations**, a business can:

- identify which of its innovations can be protected (product, know-how, software, etc.);
- choose the level of legal protection to suit the innovation;
- maintain confidentiality;
- prove the existence of its innovations (tracking system, recorded evidence, lab book);
- obtain industrial property titles (patent, trademark, design/model, etc.);
- verify and acquire third-party rights;
- claim IPRs (legal flow chart, warnings, clauses in contracts, etc.);
- lay traps in its creations (deliberate errors);
- enhance its innovations;
- maintain its intellectual property.
- Protecting your innovations

Three bodies are responsible for intellectual property:

- national: **national industrial property institute** ;
- European: **office of harmonisation for the internal market** ;
- international: world intellectual property organization.

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).

In ESIGETEL the projects from the industry have rather practical than scientific aspect. Very often they are realized with students. That is why one of the most important part of the cooperation between ESIGETEL and industry consist on common organization of students internships.

At Esigetel, internships are key moments when strong links are created between the students and companies. For every year in the program there is an internship which has different goals and objectives, giving students the opportunity to progressively learn the different facets of the professional world and engineering. Esigetel works in close partnership with a large number of companies in France. Furthermore, Esigetel works with and continues to develop international partnerships with universities and companies, creating academic and professional opportunities for its students. Together there are four required internships:

- > an introductory internship at the end of the 1st year of the undergraduate program
- > a business internship at the end of the 2nd year of the undergraduate program
- > a technical internship at the end of the 1st year of the graduate program
- > an engineering internship or final-year internship at the end of the 2nd year of the undergraduate program

More details about internship:



Undergraduate Program:

L1: First-year undergraduate students complete a 1-month to 2-month introductory internship where they make their first contact with the business world, becoming familiar with its ins and outs and the different jobs available

L2: Second-year undergraduate students complete a 1-month to 2-month business internship where they are immersed in the world of sales and learn how to develop and maintain client relationships

Graduate Program:

M1: First-year graduate students complete a 4-month technical internship from April to August. The content of this internship is largely technical and related to the domain of ICT (software development, hotline support, networks, etc.).

M2: First-year graduate students complete a 4-month technical internship from April to August. The content of this internship is largely technical and related to the domain of ICT (software development, hotline support, networks, etc.). Second-year graduate students complete a 6-month engineering internship from February to August. The content of this second internship is either technically orientated, focusing on the domain of ICT in general or is business orientated, focusing on management issues such as marketing, strategy, counseling, etc. A very large number of final internships are followed by job offers from the companies, as recruiting a junior engineer as an intern allows a company to train and assess the suitability of the young professional.

Esigetel's goal is to produce well-rounded and responsible engineers who are ready to meet current commercial IT demands. Beyond its focus on IT, Esigetel sets itself apart by providing students with a balanced blend of general training that includes communication, general culture, business management, entrepreneurship and foreign languages.

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.

