University of Lorraine
ERPI Laboratory
(Research Laboratory on Innovative Processes)
Smart Open Innovation

PhD thesis title: Data and Knowledge analysis inside new organizations of the Industry 4.0.

Keywords: Knowledge Engineering, Knowledge and organizational Modeling, Data analysis approaches, learning approaches.

Description:
A worldwide trend in advanced manufacturing countries is defining Industry 4.0, Industrial Internet and Factories of the Future as a new wave that can revolutionize the Design of innovative products, their production and the associated services. A lot of companies are currently facing the challenge that plenty of technologies like the information and communication technology are indeed available but the companies, i.e. the individual employees, are not prepared for a successful use of Industry 4.0. Companies which want to set up the concept of Industry 4.0 need to think about new open human organizations where professional actors have to interact with smart machines, connected objects (IoT-Internet of Things), storage systems and production facilities able to exchange information with autonomy and intelligence. Such systems should be able to decide and trigger actions, and control each other independently and for such reason it is required the use of Knowledge based and intelligent information approaches. Moreover these human open organizations have to also taking into account the external environment of their companies to get information from web communities, competitors et partners about new innovative production means, new factory processes, etc. Therefore, learning and knowledge management approaches can make a substantial contribution to develop the Industry 4.0.
The aim objectives of this PhD research work are:
- To model new open organizations of the industry 4.0
- To analyze and exploit the data generated in the industry 4.0 organizations
- To identify, structure the knowledge created, generated and shared by the communities of the industry 4.0
- To propose an intelligent system to assist the technicians and engineers by giving recommendations or decision elements during their professional activities.

The research project will be done in the ERPI laboratory of the University of Lorraine (Université de Lorraine) in Nancy France (http://welcome.univ-lorraine.fr/en). The Université de Lorraine has 55 000 students and 1800 PhD Students divided in 60 research laboratories.
The ERPI laboratory is a research group which work on innovative processes. The laboratory has developed since 2012 a Living Lab and a Fab Lab. The experiments will be done with the Living Lab community and Fab Lab platform of the ERPI laboratory.

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Associated references:

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More information: Compensation indexed to the evolution of public service compensation: approximately 1768.55 € monthly for a research activity and 1992.69 € monthly in the case of complementary activities (teaching, scientific and technical information, valuation of research, consulting or expertise missions for companies or public)

Important Dates:
- Dead line to send your CV and resume: April 30 2018 (to davy.monticolo@univ-lorraine.fr)
- Acceptance notification: June 2018
- Beginning of the research work : September 2018.