Ernestina Menasalvas

Mining Electronic Health Records: Challenges and Impact

Abstract:
Big data applications in the Healthcare Sector indicate a high potential for improving the overall efficiency and quality of care delivery. In the health care sector though, big data analytics has still to address several technical requirements being unstructured data analysis one of them. Unstructured data represents a powerful untapped resource—one that has the potential to provide deeper insights into data and ultimately help drive competitive advantage. In this talk some of the most common challenges of processing such data in order to extract useful knowledge will be analyzed. In particular, we will deal with the following challenges: i) clinical narratives preprocessing using NLP, ii) name entity recognition, iii) negation detection, iv) detection of events. In the talk we will focus on a real use case in which we are working in the frame of a European project called IASIS. In fact we will analyze the challenges of analyzing reports and notes of patients suffering from cancer in order to extract patterns (survival, treatment, antecedents, …) that can help physicians to get insights for better management of the disease.

Biosketch :
Ernestina Menasalvas is a Professor at the Department of Computer Science of Universidad Politécnica de Madrid (UPM). She studied Computer Science and she has a PhD in Computer Science. She leads the MIDAS “Data Mining and data simulation group” at the Center of Biotechnology in UPM and she is databases and data mining professor at UPM. Her research activities are in various aspects of data mining project development and in the last few years her research has focused on data analysis in the medical field specifically on extracting patterns from clinical notes. She has participated in more than 30 projects related to extracting knowledge from datasets (H2020, FP7, EIT-Health, …). She has published more than 40 papers in journals including “Data and Knowledge Engineering Journal”, “Physics Reports”, “Information Sciences”, “Expert Systems with Applications”, “Journal of Medical Systems”, “International Journal of Intelligent Data Analysis”, and “Computer and Programs methods in Biomedicince”.