Seminar Topics

Seminar Topic : 01

“ Information Extraction ”

In the last few decades, with the advent of the World Wide Web (WWW), the world is being overloaded with huge amounts of data. This huge data carries potential information that once extracted, can be used for betterment of humanity. Information from this data can be extracted using manual and automatic analysis. Manual analysis is not scalable and efficient, whereas, automatic analysis involves computing mechanisms that aid in automatic information extraction over huge amounts of data. WWW has also affected overall growth in scientific literature that makes the process of literature review quite laborious, time consuming and cumbersome for researchers. Hence a dire need is felt to automatically extract potential information out of an immense set of scientific articles to automate the process of literature review. Therefore, in this study, aim is to present the overall progress concerning automatic information extraction from scientific articles. The information insights extracted from scientific articles are classified in two broad categories i.e. metadata and key-insights. As available benchmark datasets carry a significant role in overall development in this research domain, existing datasets against both categories are extensively reviewed. Later, research studies in literature that have applied various computational approaches applied on these datasets are consolidated. Major computational approaches in this regard include Rule-based approaches, Hidden Markov Models, Conditional Random Fields, Support Vector Machines, Naïve-Bayes classification and Deep Learning approaches. Currently, there are multiple projects going on that are focused towards the dataset construction tailored to specific information needs from scientific articles. Hence, in this study, state-of-the-art regarding information extraction from scientific articles is covered. This study also consolidates evolving datasets as well as various toolkits and code-bases that can be used for information extraction from scientific articles.

Seminar Topic : 02

“ Machine Translation ”

This paper, accompanied by peer group commentary and author's response, is a discussion paper concerning the state of the art in Machine Translation. The current orthodoxy is first summarized, then criticized. A number of research projects based on the standard architecture are discussed: they involve the use of Artificial Intelligence techniques, advanced linguistic theories, and

sublanguage. Alternative approaches discussed are systems which develop or update their grammars semi-automatically, dialogue MT, and corpus-based MT including example-based and statistical approaches.

Seminar Topic : 03

" High-Resolution Motor State Detection in Parkinson's Disease Using Convolutional Neural Networks "

Parkinson's disease is the second most common degenerative disease caused by loss of dopamine producing neurons. The substantia nigra region is deprived of its neuronal functions causing striatal dopamine deficiency which remains as a hallmark in Parkinson's disease. Clinical diagnosis reveals a range of motor to non motor symptoms in these patients. Magnetic Resonance (MR) Imaging is able to capture the structural changes in the brain due to dopamine deficiency in Parkinson's disease subjects. In this work, an attempt has been made to classify the MR images of healthy control and Parkinson's disease subjects using deep learning neural networks. The Convolutional Neural Network architecture AlexNet is used to refine the diagnosis of Parkinson's disease. The MR images are trained by the transfer learned network and tested to give the accuracy measures. An accuracy of 88.9% is achieved with the proposed system. Deep learning models are able to help the clinicians in the diagnosis of Parkinson's disease and yield an objective and better patient group classification in the near future.