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Advances in data streams processing

Abdelhamid Bouchachia
Bournemouth University, UK

Over the recent years, learning from data streams that evolve over time has been witnessing an ever-increasing interest within research and industry communities. Typically a wide range of applications exploit data streams for different sorts of decision making, including monitoring, industrial processes, internet traffic, surveillance, etc. In this keynote, we will discuss the state of the art of data mining techniques for data streams. In particular, we will overview stream representation and summarization, stream clustering and stream classification. We will, in particular, discuss online learning and some associated concepts such as drift handling, active online learning, and semi-supervised online learning for data streams. We will then highlight some of the open issues and research avenues related to data stream processing.

abouchachia@bournemouth.ac.uk

Granular rough computing selected methods for data size reduction

Piotr Artiemjew¹ and Lech Polkowski²
¹University of Warmia and Mazury, Poland
²Polish-Japanese Academy of Information Technology, Poland

The goal of this talk is to present the selected recent methods from the area of granular computing with their potential application to the big data. Introduced by Prof. Lotfi A Zadeh, granular computing consists of compressing knowledge from individual objects into granules i.e. clumps of objects drawn together by some form of similarity. Computing with granules reduces noise in data and speeds up computations. The talk is based on the book by Polkowski and Artiemjew: “*Granular Computing in Decision Approximation*”. In the recent years, the rapid development in this field can be observed. There are many methods, which are potentially useful in size reduction of data with maintenance of the internal knowledge. The granular computing is one of the future fields of data exploration research. Its uniqueness is determined by the human centered profile of methods giving us more natural thinking about the data exploration.

piotr.artiemjew@uwm.edu.pl