CALL FOR PAPERS: Workshop on Active Learning for Big Data

Organized in conjunction with **The 10th IEEE International Conference on Cyber, Physical and Social Computing (CPSCom-2017), 21~23 June 2017, Exeter, UK** http://cse.stfx.ca/~CPSCom2017/

General Information

Active Learning is a revised supervised learning scheme that adopts selective sampling manner. It addresses the interaction between Machine Learning/Data Mining algorithms and human feedbacks, reduces the human efforts for manual labelling, avoids data redundancy, and improves the computation speed of Machine Learning tools. For examples, a high-performance learner can be achieved with a small portion of the data set by querying the labels of the most representative samples and requesting the most relevant information. As a result, Active Learning bridges the gap between data-centric and user-centric approaches. It is a very useful methodology when there is a need to perform interactive model evaluation and model updating for both off-line and on-line applications.

Active Learning has been studied for many years under the traditional single-instance and single-label settings, where each data point is dependent of the others and is belonging to a specific class. On one hand, these learning methods are not applicable to complex scenarios, such as multi-instance and multi-label settings. On the other hand, with the rapid expansion of existing data, there are still gaps between theoretical research and practical applications. When designing Active Learning methods for complex scenarios, new issues are raised, including the design of multi-instance or multi-label learners, feature selection methods, sample selection indices, stopping criteria, and performance evaluation metrics, etc. In order to adapt Active Learning to big data problems, methods must be able to handle data with high volumes and high-dimension, with the ability of mining useful information from increasingly large data streams.

This workshop aims to provide a forum for researchers to discuss the above-mentioned problems for Active Learning, identify challenges for Active Learning in complex scenarios, provide solutions to Active Learning regarding big data, as well as discover the potentials of Active Learning to new real-world applications. We encourage any related topic for theoretical analysis, methodology design, and real-world applications regarding Active Learning.

Paper Submission at https://easychair.org/conferences/?conf=albd2017

Scope and Topics

Topics of interest include, but are not limited to:

- New methods/models for pool-based Active Learning and stream-based Active Learning
- Design of sample selection criteria for Active Learning
- Design of stopping criteria for Active Learning
- Statistical evaluation of Active Learning
- Active feature selection
- Multiple-instance Active Learning and related applications
- Multi-label Active Learning and related applications
- Ensemble Active Learning
- Active Learning for imbalanced data
- On-line Active Learning from data streams
- Active Learning in connection with evolutionary algorithms
- Active Learning in connection with transfer learning and manifold learning, etc.
- Active Learning in combination with recent complex model structures such as deep learning, extreme learning machine, etc.
- Active Learning for any data-oriented applications

Important Dates

Paper Submission Due:	22 March 2017
Authors Notification:	22 April 2017
Camera-Ready papers:	15 May 2017
Early Registration Due:	15 May 2017
Conference Date:	21-23June 2017

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