



ICT, FET Open

LIFT ICT-FP7-255951

Using Local Inference in Massively Distributed Systems

Collaborative Project

D 6.4

Project Workshop

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Abstract:

This document is the LIFT deliverable of WP6 for the third review period (01.10.2012 – 30.09.2013). The document contains an overview of two project-related workshops to be held in August 2013.

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D6.4 – Project Workshop

Minos Garofalakis, Antonis Deligiannakis, Michael May, Christine Kopp

1 Introduction

In year three of LIFT two project-related workshops will take place that are co-located with major scientific conferences in the area of data management and data mining. The first workshop, Big Dynamic Distributed Data, is co-located with VLDB 2013 and is organized by TUC. It focuses on the core topic of LIFT, namely complex computations over partitions of massive streaming data. The second workshop, Ubiquitous Data Mining, is jointly organized by João Gama and FHG. It is already the third workshop in its series and has in 2013 a special focus on distributed streaming data.

2 First International Workshop on Big Dynamic Distributed Data (BD³ 2013)

Date and Location

August 30th, 2013, Trento, Italy (in conjunction with VLDB 2013)

Chairs

- General Chairs: Minos Garofalakis, Antonios Deligiannakis
- Program Chairs: Graham Cormode, Assaf Schuster, Ke Yi

Website

<http://www.softnet.tuc.gr/bd3>

Workshop Description

As the amount of streaming data produced by large-scale systems such as environmental monitoring, scientific experiments and communication networks grows rapidly, new approaches are needed to effectively process and analyze such data. There are several promising directions in the area of large-scale distributed computation, that is, where multiple computing entities work together over partitions of the massive, streaming data to perform complex computations. Two important paradigms in this realm are continuous distributed monitoring (i.e., continually maintaining an accurate estimate of a complex query), and distributed and cluster-based systems that allow the processing of big, streaming data (e.g., IBM System S, Apache S4, and Twitter Storm).

The aim of the BD3 workshop is to bring together computer scientists with interests in this field to present recent innovations, find topics of common interest and to stimulate further development of new approaches to deal with massive dynamic and distributed data.

Topics of interest include (but are not limited to):

- Novel architectures for BD3
- Extensions to existing models for BD3
- Algorithms for mining and analytics for BD3
- Query processing in BD3
- Efficient communication protocols for BD3
- Languages and structures for BD3
- Theoretical basis and hardness for BD3
- Engineering case-studies in BD3
- Position papers on challenges and new directions in BD3
- Privacy issues in BD3
- Energy efficiency and reliability in BD3
- Scheduling and provisioning issues in BD3

3 Workshop on Ubiquitous Data Mining (UDM 2013)

Date and Location

August 3rd-5th, 2013, Beijing, China (in conjunction with IJCAI 2013)

Chairs

- João Gama, Michael May, Nuno Marques, Paulo Cortez

Website

<http://www.liaad.up.pt/udm>

Workshop Description

Two major technological evolutions modify our relationship with our environment:

- Widely available and cheap computer power. Simple objects that surround us are gaining sensors, computational power, and actuators, and are changing from static, into adaptive and reactive systems.
- The explosion of networks of all kinds offers new possibilities for the development and self-organization of communities.

The new characteristics of data reflect a World in Movement:

- Time and space. The objects of analysis exist in time and space. Often they are able to move.
- Dynamic environment. These objects exist in a dynamic and unstable environment, evolving incrementally over time.

- Information processing capability. The objects are endowed with information processing capabilities.
- Locality. The objects never see the global picture - they know only their local spatio-temporal environment.
- Real-Time. The models have to evolve incrementally in correspondence with the evolving environment.
- Distributed. The object will be able to exchange information with other objects, thus forming a truly distributed environment.

Ubiquitous Data Mining (UDM) uses Data Mining techniques to extract useful knowledge from data with these characteristics. The goal of this workshop is to convene researchers (from both academia and industry) who deal with techniques such as: decision rules, decision trees, association rules, clustering, filtering, learning classifier systems neural networks, support vector machines, preprocessing, post processing, feature selection, visualization techniques, etc. for UDM and related themes.

Topics include but are not restricted to:

- Adaptive Data Mining
- Distributed Data Mining
- Distributed Data Streams
- Grid Data Mining
- Learning in Ubiquitous environments
- Learning from Sensor Networks
- Learning from Social Networks
- Visualization Techniques for UDM
- Incremental On-line Learning Algorithms
- Single-Pass and Scalable Algorithms
- Learning in distributed neural network systems;
- Real-Time and Real-World Applications
- Resource-aware UDM
- Theoretical frameworks for UDM