ΔΙΑΛΕΞΗ

" Scalable Management of Complex and Composite Data"

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Περίληψη – Abstract

Data management has become more critical and challenging than ever; modern data come in different formats, collected in enormous volumes and arrive at an extremely high ratio from multiple sources. The explosion of Big Data has revealed the need to research and develop systems that will support ultra-low latency service and real-time data analytics. Towards this direction, the breakthroughs witnessed the last decades in distributed computing, on multi-core CPU/GPU processors and the availability of large amounts of main memory at low cost have now made viable to build modern scalable data management systems that combine in-memory and/or distributed processing with high performance computing.

Besides, modern data are becoming increasingly more complex as they can be routinely enriched with different and multiple types of non-traditional (i.e., not managed by traditional Relational Data Management Systems) information such as space, text, time and graph information. With the abundance of information produced nowadays, processing such enriched or composite data (very often in main memory, in real time) has a direct impact on modern sciences and businesses. Efficient analysis of such massive data translates to better customer satisfaction, better services and consequently it may be the catalyst in creating and maintaining a successful status. What is more, complex/composite data are revolutionizing services that directly affect and improve peoples lives.

In this context a number of interesting challenges arise for the scalable management of modern complex and composite data. In my talk, I first briefly discuss these challenges and provide an overview of my research and of my plans for the future. I also describe in detail my contributions in two particular types of complex data. Specifically, I study the efficient and scalable computation of stabbing, range and join queries for one-dimensional data in the form of intervals. In addition, I discuss my work on evaluating distributed solutions for computing set similarity joins.

Panagiotis Bouros received his diploma and doctorate degree from the School of Electrical and Computer Engineering at the National Technical University of Athens,

Greece. Since 2018, he is an assistant professor at the Institute of Computer Science in Johannes Gutenberg University Mainz, Germany, also the founder and the head of the Data Management group. Prior to Mainz, he held research positions at Aarhus University, Denmark, Humboldt-Universitaet zu Berlin, Germany and the University of Hong Kong, Hong Kong SAR, China. His research interests are in data management and query processing with a special focus on non-traditional data types such as spatial and temporal data, text and graphs, and on modern parallel hardware. For more information please visit either personal page in http://pbour.github.io or the webpage of JGU's Data Management in https://datamanagement.cs.uni-mainz.de.

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