Abstract:

Data are becoming increasingly more complex. Real-life objects nowadays can be routinely assigned different types of information such as text, spatial geometries, timestamps and graph (social) information. In the past, these data dimensions have been extensively studied but in most cases independently. On the other hand, the abundance of objects enriched with descriptive information from multiple sources and the plethora of applications collecting such complex data signify the need to extend or even redesign our data management systems. In this spirit, my research has focused first on introducing novel querying operators and analysis tasks, and second on devising efficient methods to process the huge amounts of complex data produced by modern businesses and sciences. Indeed, issues such as the Volume, Velocity, Variety, Veracity and Complexity arise in the context of managing complex data types which calls for novel techniques as the characteristics of modern and future datasets naturally outgrow the capabilities of contemporary query processing techniques. This talk will provide an overview of my research on managing complex data types and discuss my directions for future work.