

# **Big Data Analytics: Should We Look for Revolutionary rather than Evolutionary Approaches?**

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Although we are drowning in *data*, many a times it is quite difficult to find useful *information*. This situation has come about due to various technological advances which have tremendously increased our ability to generate, collect, store, and curate very large amounts of data. This is true whether it is data on the web, scientific data, personal data, or data collected by enterprises. Heterogeneity of data further adds to the size and the complexity of analysis.

In this talk, we first identify the causes that have helped us generate and accumulate large amounts of raw data. Then we overview the provenance of data management and current approaches used for managing very large amounts of data and obtaining actionable information. By understanding the current limitations and understanding newer requirements, we may be able to harness very large amounts of data using revolutionary approaches. Finally, we explore potential approaches for dealing with very large amounts of data that will allow us to filter/fuse/reduce it to obtain actionable knowledge. We briefly discuss current approaches including stream and complex event processing, mining, cloud computing, and the need for visualization as examples of potential approaches that need to be synergistically mixed and matched to achieve the desired outcome. Other aspects, such as massive parallel processing will also be discussed briefly for dealing with very large amounts of data.

This talk is based on presenter's research/projects over the last 30 years. A number of students and collaborators have participated in research/projects.

Sharma Chakravarthy is a co-author of the book "Stream Data Processing: A Quality of Service Perspective", Springer-Verlag, April 2009 (ISBN: 978-0-387-71002-0).