

## Big Data Processing, Storage and Analytics using NoSQL Systems for Intelligent Transportation Systems

Venkat N Gudivada and Dhana L. Rao East Carolina University, Greenville, North Carolina, USA

**Abstract.** Abstract Management and control of transportation systems depend on data which is collected, cleaned, and integrated from disparate data sources. Given the data heterogeneity, volume, and velocity, traditional Relational Database Management Systems (RDBMS) are not suitable for transportation systems data. To meet the needs of Big Data-driven applications, a bewildering array of new data management systems have emerged in the marketplace [1].

These systems include the well-entrenched but evolved RDBMS as well as several new classes of data management systems called NoSQL. While the relational data model [2] and the SQL query language [3] are the foundations of RDBMS, the new systems use different data models and query languages. There are over 350 of NoSQL systems in the market place [4, 5].

In this presentation, we discuss the salient characteristics of each class under the proposed taxonomy, data modeling and query APIs, and use-cases in the Intelligent Transportation Systems (ITS) domain.

**Keywords:** NoSQL, Big Data, Data Analytics, Intelligent Transportation Systems

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**Bio:** *Dr. Venkat N Gudivada* is a professor and chair of the Computer Science department at East Carolina University, Greenville, North Carolina, USA. His research interests are in database management, information retrieval, natural language processing, and personalized learning. He received his Ph.D. in Computer Science from the University of Louisiana at Lafayette, Louisiana. He is a senior member of the IEEE Computer Society. He can be reached at [gudivadav15@ecu.edu](mailto:gudivadav15@ecu.edu) or 252-328-9680.

*Dr, Dhana L Rao* is a teaching assistant professor of Biology at East Carolina University, Greenville, North Carolina, USA. Her research interests are microbial ecology and bioinformatics. She received her Ph.D. from the University of New South Wales, Sydney, Australia. She can be reached at [raodh15@ecu.edu](mailto:raodh15@ecu.edu) or 252-328-9693.

