IET The Institution of Engineering and Technology

Call for Chapters: IET Handbook of Big Data Analytics
Book Series: IET Book Series on Big Data

Editors

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"Big Data" characterized by 5 Vs (volume, velocity, variety, veracity and value) has graduated from being a fad into an absolute necessity. Consequently, big data analytics has become ubiquitous in all fields of science, engineering, medicine, business and management. This has been possible because of (i) the phenomenal rise in a variety of data-driven models across all forms of analytics-descriptive, predictive and prescriptive as well as (ii) the concomitant developments in data engineering wherein parallel and distributed computational frameworks for ingesting and analyzing big data have been proposed. Hadoop MapReduce and Apache Spark are the two successful frameworks in this context. Further, many of the three forms of analytical models have been made scalable (rendered amenable for distributed and parallel computation) in three ways: (i) horizontal (ii) vertical and (iii) hybrid. Horizontal parallelization refers to cluster computing where a master and host of slave nodes perform computation in parallel. This involves both data and algorithm parallelization with the help of Hadoop or Spark frameworks. Vertical parallelization involves GPGPU programming where a single server has multiple GPU processors. Finally, hybrid parallelization integrates both concepts with a cluster of GPU-based servers. Near real-time data analytics are the reality now with the availability of memory at cheaper prices. Several frameworks are currently available to achieve real time big data analytics. However, there are still many potential issues that need to be addressed for big data processing and analytics in real time. Big Data Analytics using the Open Source frameworks such as Hadoop, Spark, Cassandra, MongoDB, etc. are at a massive scale. This trend will continue to grow. This edited **2-volume handbook** will present a large spectrum of contributions from methodologies of Big data analytics to applications. It is aimed at providing a unique platform for researchers, engineers, developers, educators and students.

These two volumes will be indexed in Scopus, ISI/Web of Science, INSPEC and Google Scholar.

Volume 1- Methodologies under the frameworks Hadoop MapReduce, Apache Spark and GPGPU programming:

- Clustering, Classification, Association rule Mining, Regression, Outlier detection
- Recommender systems
- Text analytics
- Subspace learning
- Data lakes, Data Fabric & Data cataloging
- Big data tensor models
- In-memory databases & In-database analytics
- Imbalanced data – learning, classification, dimensionality reduction and analytics
- Parallelism techniques
- Indexing approaches
- Data partitioning strategies
- Data curation methods
- High dimensional models
- Advances in High Dimensional Big data analytics
- Spatial and temporal big data analytics
- Streaming and real-time data analytics
- Scalable search architectures
- Cognitive data analytics
- Data lineage
- Big Data aggregation and interpretation and Big data analytics capabilities
- Smoothing models, Statistical models for big data analytics, Sparse learning models for big data and analytics
- Big data analytics in uncertain environments
- Graph and bulk parallel processing paradigms
- Computational science and intelligence
- Practical case studies that deal with scalability
- Machine learning algorithms for Big data analytics including deep learning

- Energy considerations for Big data analytics
- Data governance issues for Big data analytics: data policies and processes viz GDPR.

Volume 2- Application areas of interest include, but not limited to:

- Security (Cyber Security, Cyber intelligence and defence, Crime & Fraud Analytics, Exploratory security analytics, Big data analytics for security intelligence, Cyber forensics etc.)
- Internet & Dark Web Data Analytics
- IoT & Cyber Physical Systems Data Analytics
- Private preserving data analytics
- Time series data analytics
- Big data analytics for customer churn prediction
- Knowledge-centred Big data analytics
- Big data and behaviour analytics
- Big Social data analytics
- Big data analytics with Cloud, Fog and Edge computing.
- Financial Services (Banking, Stock markets and Insurance sectors)
- Big data analytics for Business (customer analytics subsuming churn prediction, credit scoring, customer acquisition, campaign management, sentiment analysis, recommendation system, operational problems)
- Management data analytics
- Video and visual analytics
- Big data analytics in Marketing
- Ethical implications of big data analytics.

Important Dates

1.	Submission of the Chapter Proposals:	**July 31st, 2019.**
2.	Notification of Acceptance of the Chapter Proposal:	**August 15th, 2019.**
3.	Submission of the Full Chapter:	**October 31st, 2019.**
4.	Reviews to the authors:	**December 15th, 2019.**
5.	Revised Chapter Submissions:	**February 28th, 2020.**
6.	Notification of Final Acceptance:	**March 31st, 2020.**

For the proposed chapter, please provide a title and a brief abstract. For further details and submissions, please contact: iethandbook@gmail.com