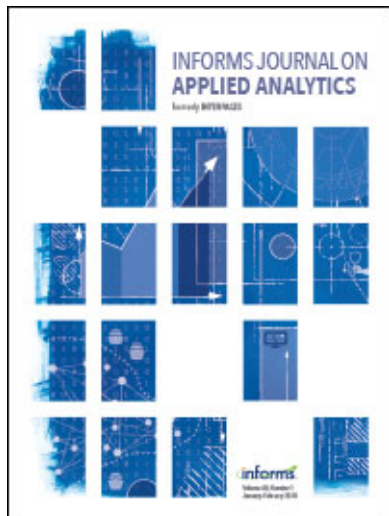




Interfaces

Publication details, including instructions for authors and subscription information:
<http://pubsonline.informs.org>

Introduction to the Interfaces Special Issue: Applications of Analytics and Operations Research in Big Data Analysis

Deepak S. Turaga

To cite this article:

Deepak S. Turaga (2018) Introduction to the Interfaces Special Issue: Applications of Analytics and Operations Research in Big Data Analysis. *Interfaces* 48(2):93-93. <https://doi.org/10.1287/inte.2018.0946>

Full terms and conditions of use: <https://pubsonline.informs.org/Publications/Librarians-Portal/PubsOnLine-Terms-and-Conditions>

This article may be used only for the purposes of research, teaching, and/or private study. Commercial use or systematic downloading (by robots or other automatic processes) is prohibited without explicit Publisher approval, unless otherwise noted. For more information, contact permissions@informs.org.

The Publisher does not warrant or guarantee the article's accuracy, completeness, merchantability, fitness for a particular purpose, or non-infringement. Descriptions of, or references to, products or publications, or inclusion of an advertisement in this article, neither constitutes nor implies a guarantee, endorsement, or support of claims made of that product, publication, or service.

Copyright © 2018, INFORMS

Please scroll down for article—it is on subsequent pages



With 12,500 members from nearly 90 countries, INFORMS is the largest international association of operations research (O.R.) and analytics professionals and students. INFORMS provides unique networking and learning opportunities for individual professionals, and organizations of all types and sizes, to better understand and use O.R. and analytics tools and methods to transform strategic visions and achieve better outcomes. For more information on INFORMS, its publications, membership, or meetings visit <http://www.informs.org>

Introduction to the *Interfaces* Special Issue: Applications of Analytics and Operations Research in Big Data Analysis

Deepak S. Turaga^a

^a IBM, Thomas J. Watson Research Center, Yorktown Heights, New York 10598

Contact: turaga@us.ibm.com

<https://doi.org/10.1287/inte.2018.0946>

Copyright: © 2018 INFORMS

The numbers and modalities of digital information sources being captured to monitor our traffic, weather, goods, manufacturing facilities, utilities, ports, health, and IT infrastructure is continuing to grow at an incredible rate. Commercial and government organizations require the continuous analysis of this *structured and unstructured data*—transactions, audio, video, images, text, sensor readings—to monitor, alert, learn from, and in some cases, affect and control our surroundings. Doing this at scale has necessitated the move away from *traditional database store-and-process* solutions to the emergence of the *big data processing paradigm*—with algorithms, systems, and applications designed to process data continuously and in a scalable distributed manner. This includes the stream processing paradigm for continuous analysis, and map-reduce (and similar) frameworks for scalable data processing.

Big data processing lies at the intersection of several diverse disciplines, including large-scale distributed systems, programming models, signal processing, data mining and machine learning, real-time algorithms, and user interfaces. Big data processing has also heavily leveraged analytics and operations research both

at the business level, for analyzing the data to enable better decisions and at the systems level, to make decisions about scheduling and optimization for scaling.

In this special issue, we present a diverse collection of papers that highlight the use of these types of big data techniques, systems, and approaches to address complex real-world applications. These applications span a wide range including financial applications, applications for business insurance, industrial applications, military and city planning-related applications, and on mining information from social media. Each of these papers describes the collection of data that was analyzed, the techniques used for the analysis, specifically emphasizing the big data nature of these problems. They also highlight the results found and the value of the deployed solution, and amply demonstrate the power of such approaches.

Looking to the future, with the recent advances in deep learning and artificial intelligence (AI) technologies, we anticipate a rapidly accelerating use of big data combined with AI to solve many similar problems. This special issue provides a preview of things to come.