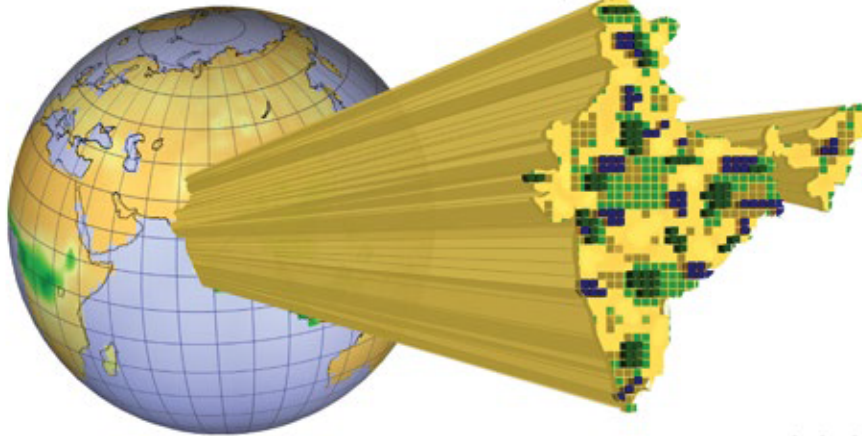


INTEGRATIVE DATA SCIENCE INITIATIVE DISTINGUISHED LECTURE



*Credits: Peter Kent, College of Engineering, Northeastern Univ
Correspondence for the Nature
Change paper: Auroop R Gangu
and Environmental Engineering,
Northeastern University*

Design Credit: Geneva Hill

Speaker Biography:



Vipin Kumar is a Regents Professor at the University of Minnesota, where he holds the William Norris Endowed Chair in the Department of Computer Science and Engineering. Kumar received the B.E. degree in Electronics & Communication Engineering from Indian Institute of

Technology Roorkee (formerly, University of Roorkee), India, in 1977, the M.E. degree in Electronics Engineering from Philips International Institute, Eindhoven, Netherlands, in 1979, and the Ph.D. degree in Computer Science from University of Maryland, College Park, in 1982. Kumar's current research interests include data mining, high-performance computing, and their applications in Climate/Ecosystems and health care. Kumar is the Lead PI of a 5-year, \$10 Million project, "Understanding Climate Change - A Data Driven Approach", funded by the NSF's Expeditions in Computing program that is aimed at pushing the boundaries of computer science research. He also served as the Head of the Computer Science and Engineering Department from 2005 to 2015 and the Director of Army High Performance Computing Research Center (AHPCRC) from 1998 to 2005. His research has resulted in the development of the concept of isoefficiency metric for evaluating the scalability of parallel algorithms, as well as highly efficient parallel algorithms and software for sparse matrix factorization (PSPASES) and graph partitioning (METIS, ParMetis, hMetis). He has authored over 300 research articles, and has coedited or coauthored 10 books including two text books "Introduction to Parallel Computing" and "Introduction to Data Mining", that are used world-wide and have been translated into many languages.

BIG DATA IN CLIMATE AND EARTH SCIENCES: CHALLENGES AND OPPORTUNITIES FOR DATA SCIENCE

December 3, 2018, 3-4 p.m.

LWSN 1142

Vipin Kumar, Regents Professor and William Norris Chair in Large Scale Computing, Department of Computer Science and Engineering, University of Minnesota

Abstract:

The climate and earth sciences have recently undergone a rapid transformation from a data-poor to a data-rich environment. In particular, massive amount of data about Earth and its environment is now continuously being generated by a large number of Earth observing satellites as well as physics-based earth system models running on large-scale computational platforms. These massive and information-rich datasets offer huge potential for understanding how the Earth's climate and ecosystem have been changing and how they are being impacted by humans actions. This talk will discuss various challenges involved in analyzing these massive data sets as well as opportunities they present for both advancing machine learning as well as the science of climate change in the context of monitoring the state of the tropical forests and surface water on a global scale.

