



“Mining Global Earth Observations: Algorithms, Applications, and Challenges”

Dr. Ranga Raju Vatsavai, Ph.D.

**Department of Computer Science and Center for
Geospatial Analytics, North Carolina State University**

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Abstract:

Global Earth Observations (GEO) from satellites for more than 40 years have proven to be highly useful in monitoring the Earth for settlement mapping, flood inundation mapping, land use/land cover changes, forest fires, deforestation, and precision agriculture. Advances in sensing technology have led to the development of high-spectral and very high spatial resolution imagery leading to petabytes of image archives. These advances coupled with drone technologies are opening up new possibilities for generating near real-time data products that help farmers and first responders alike. Mining these images allows us to monitor changes at global scales for characterizing vegetation dynamics, understanding complex interactions between food, energy, and water systems, and analyzing settlements and human migration patterns. In this talk we present novel applications of data mining on global earth observations.

Bio:

Raju is a Chancellor’s Faculty Excellence Program Geospatial Analytics Cluster Associate Professor in the Department of Computer Science, North Carolina State University (NCSU). He works at the intersection of spatial and temporal big data management, analytics, and high performance computing with applications in the national security, geospatial intelligence, natural resources, agriculture, climate change, location-based services, and human terrain mapping. Before joining NCSU, Raju was the Lead Data Scientist for the Computational Sciences and Engineering Division (CSED) at the Oak Ridge National Laboratory (ORNL). He has published more than 100 peer-reviewed articles in conferences and journals, and edited two books on “Knowledge Discovery from Sensor Data.” He served on program committees of leading international conference including ACM KDD, ACM SIGSPATIAL GIS, ECML/PKDD, SDM, CIKM, IEEE BigData, and co-chaired several workshops including ICDM/SSTDM, ICDM/KDCloud, ACM SIGSPATIAL BigSpatial, ACM/IEEE Supercomputing/BDAC, ACM KDD/LDMTA, ACM KDD/Sensor-KDD, and SIAM DM/ACS. He holds MS and PhD degrees in computer science from the University of Minnesota.

