

# EARTH SCIENCE, RECYCLING & SPACE TECHNOLOGY

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Nicolas H Younan, J Environ Waste Management and Recycling 2019, Volume 2



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### BIOGRAPHY

Nicolas H Younan is the Department Head and James Worth Bagley Chair of Electrical and Computer Engineering at Mississippi State University. He received the B S and M S Degrees from Mississippi State University, in 1982 and 1984 respectively, and the PhD degree from Ohio University in 1988. He has been involved in the development of advanced signal processing and pattern recognition algorithms for data mining, data fusion, feature extraction and classification and automatic target recognition/identification. He has published over 300 papers in journals, referred conference proceedings and book chapters. He is a senior member of IEEE and a member of the IEEE Geoscience and Remote Sensing society, serving on two technical committees: Image Analysis and Data Fusion, and Earth Science Informatics (previously Data Archive and Distribution). He has served as the Chair, Co-Chair and as an Editor for various national and international conferences and workshops.

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### INFORMATION RETRIEVAL FROM EARTH OBSERVATION (EO) IMAGERY

Earth Observations (EO) data are obtained from a multitude of sources and requires tremendous efforts and coordination among researchers and user groups to come to a shared understanding on a set of concepts involved in a domain. The ultimate goal of any EO system is to provide understanding, which will often require expertise and/or data sources from globally distributed resources, thus presenting unique challenges. To address these challenges, it is incumbent upon the global community to evolve and sustain a global observation network. These observations serve as the foundation for the models that are used to describe Earth processes. As this observational data accumulates in global archives, new opportunities become available for knowledge discovery about the Earth system. However, access to these observational data is optimized for the science teams for whom the instruments were launched and access by operational users may be problematic. This presentation will lay out some of the challenges for those engineers and scientists involved in pattern recognition in the Earth remote sensing arena. It describes the problem space for making decisions and introduces the concept of contextual remote sensing.