

*The Electrical and Computer Engineering Program presents
ECEN Seminar Series*

Big Data: What, why, when and how

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3 – 3:50 PM

Lecture Hall 144

The issue of Big Data was introduced relatively recently (last 15 years) as the huge amounts of data became available through the space exploration, weather forecasting and medical biogenetic investigations. Social media and outlets such as Google, YouTube, Facebook and others have also faced similar problems of handling huge data sets. The power systems are now experiencing huge amount of data obtained through field measurements as well. This talk focuses on the role of Big Data in managing and controlling future power system, which will be characterized with “explosion” of data and unprecedented computational and communication capabilities to automatically extract the knowledge.

The focus is on different data sources that range from field measurements obtained through substation/feeder intelligent electronic devices such as Digital Protective Relays (DPRs), Digital Fault Recorders (DFRs), Phasor Measurement Units (PMUs), to other data sets obtained from specialized commercial and/or government/state databases: weather data of different types, lightning detection data, seismic data, fire detection data, electricity market data, etc. Due to the massive amount of such data (terabytes) available in real time and through historical records, processing and management of such data requires revisiting data analytics used to correlate data and extract features already developed in the Big Data industries such as banking, insurance and health care. This talk will point out the Big Data characteristics in the power industry where the temporal and spatial properties, as well as correlation to the power system and component models are necessary for an efficient data uses.



Dr. Mladen Kezunovic is a Eugene E. Webb endowed Professor at Texas A&M University where he was employed since 1986. Dr. Kezunovic serves several leading roles at the university: Director, Smart Grid Center; Site Director, NSF Power Systems Engineering Research Center (PSerc), and Director, Power Systems Control and Protection Lab. He also acts as the Principal Consultant, as well as President and CEO of XpertPower™ Associates, which has been providing consulting services for utility industry for over 20 years. He worked for Westinghouse Electric in the U.S.A. as a Systems Engineer on developing the first all-digital substation design during 1979-1980 and for Energoinvest Company in Europe as the Technical Lead for substation automation development during 1980-86. He was a consultant for EdF's Research Centre in Clamart, France in 1999-2000 and was a Visiting Professor at the University of Hong Kong in fall of 2009. He also acted as a consultant to over 50 utilities and vendors worldwide, and served three terms (2009-2013) as a Director on the Board of Directors of the Smart Grid Interoperability Panel (SGIP) representing research organizations and universities.

Dr. Kezunovic was a Principal Investigator on over 100 R&D projects, published more than 450 papers and gave over 100 invited lectures, short courses and seminars around the world. He is an IEEE Fellow and Distinguished Speaker, CIGRE Fellow, and registered Professional Engineer in Texas. He is the recipient of the Inaugural 2011 IEEE Educational Activities Board Standards Education Award “for educating students and engineers about the importance and benefits of interoperability standards” and CIGRE Technical Committee Award for “remarkable technical contribution to the study committee B5, protection and automation” in 2013.

FOR MORE INFORMATION:

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