

Fall 2018 Seminar Series

Intelligent Grid Electronics for Improving Reliability and Resilience

FRIDAY SEPTEMBER 21, 2018

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Abstract: The recent increase in infiltration of distributed resources has challenged the traditional operation of power systems. Simultaneously, devastating effects of recent natural disasters have questioned the resilience of power infrastructure for an electricity dependent community. This study explores utilization of Distributed Energy Resources (DERs) and Machine Learning (ML) algorithms to improve the power availability during disastrous events. In addition to power electronics with load categorization features, the proposed system utilizes ML tools to use the information from neighboring units and external sources and makes complicated logical decisions directed towards providing power to critical loads at all times. Furthermore, the proposed model encourages consideration of ML tools as an integral part of smart grid design process together with power electronics and con-

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Bio: Lizon Maharjan (S' 12) received the B.S. degree in electrical engineering from Texas Christian University, Fort Worth, Texas, in 2011 and the M.S. degree in electrical engineering from The University of Texas at Dallas (UTD), Richardson, Texas in 2014. He is currently working towards the Ph.D. degree with focus in power electronics and energy systems at UTD. He is a graduate research assistant at the Renewable Energy and Vehicular Technology (REVT) laboratory, UTD. His research interests are smart-grid, power electronics, motor drives, and electric machines.