



Department Seminars

More Resilient Electric Grids Using Satellites Images and Artificial Intelligence

by Dr. Reza Arghandeh

Abstract

Vegetation management is one of the most substantial operating expenses for many power distribution utilities. Current processes are highly manual and work-intensive by utilizing helicopters, drones, and crews visually inspecting all sections of the utility line. Improper line maintenance leads to increased weather and vegetation induced outages, and a heightened risk for wildfire ignition. By utilizing data from satellites together with intelligence gathered from drones, we can significantly reduce inspection and vegetation management costs while also reducing the risks of wildfire. This talk presents the GridEyeS project which is an end-to-end machine learning and image processing framework for data fusion to better monitor the power lines vegetation from space to the ground. The talk also overviews the potential of space-based technologies to improve operation of power systems. GridEyeS is supported by the European Space Agency.

Biography: Dr. Reza Arghandeh is a Professor in Data Science and AI in the Department of Computer Science, Electrical Engineering and Mathematical Sciences at the Western Norway University of Applied Sciences, in Bergen, Norway. He is the director of the Collaborative Intelligent Infrastructure Lab (CI2Lab). He is also a lead data scientist in StormGeo company. He has been an Assistant Professor in the Electrical and Computer Engineering Dept, and the Center for Advanced Power Systems at Florida State University, USA, 2015-2018. He completed his Ph.D. in Electrical Engineering at Virginia Tech (2013) and spent two years as a post-doctorate fellow at the University of California-Berkeley. He also holds two masters degrees, one in Industrial & Systems Engineering from Virginia Tech (2013) and the other in Mechanical Engineering from the University of Manchester (2008). He has been a power system software designer at Electrical Distribution Design Inc. in Virginia, USA, 2011-2013. Dr. Arghandeh is the recipient of the IBM Faculty Award in 2018. He is a senior member of IEEE, and an Editor of IEEE Transactions on Industrial Informatics (TII) and Intelligent Transportation Systems (T-ITS). His research interests include data analysis and decision support for smart grids and smart cities.



Date and Time: 05 March 2021, 15:00

Place: Zoom Meeting ID: 979 4143 7632 Password: 565788