



Dr. Pirathayini Srikantha

Cyber-security Challenges and Strategies in the Power Grid

📅 Thursday, March 26, 1:30 - 2:30 PM

📍 Dupuis 217

Abstract

With the proliferation of active power entities and grid sensors, the modern electric grid is transforming into an information-rich and adaptive infrastructure. While these data and actuation capabilities can be leveraged to run the grid more efficiently - these can also be exploited and perturbed to perpetrate cascading outages in the power grid. In this talk, stealthy cyber-attacks targeting transmission, distribution and microgrid levels will be presented. The physical impacts of these attacks on grid states will be highlighted. Then, mitigation strategies that can offset these impacts will be presented. Furthermore, challenges associated with training data-driven models for the power grid will be discussed along with how these can be exploited to glean important insights into power grid operations, make erroneous decisions and stealthily alter inferencing will be presented.

Biography

Dr. Pirathayini Srikantha is currently an Associate Professor in the Department of Electrical Engineering and Computer Science at York University. She is the founder and director of the RISE (Resilient Intelligent Sustainable Energy) lab. She holds the Canada Research Chair (Tier 2) in the area of Reliable and Secure Power Grid Systems. She was previously a faculty member at Western University from 2017 to 2019. She received her B.A.Sc. degree in Systems Design Engineering from the University of Waterloo in 2009 and her M.A.Sc. degree in Electrical and Computer Engineering from the same institute in 2013. She obtained her Ph.D. degree from The Edward S. Rogers Sr. Department of Electrical and Computer Engineering at the University of Toronto in 2017. She is a certified Professional Engineer (P.Eng.) in Ontario. She is the recipient of the 2022 Ontario Professional Engineers Association - Engineering Medal for Young Engineers. She is currently serving as an Associate Editor for IEEE Transactions on Smart Grid. She also served as a General Co-Chair for IEEE Smart Grid Communications conference (2025). Her work has been published in premier smart grid journal and conference venues. Her research efforts have received recognitions that include the best paper award (IEEE Smart Grid Communications) and runner-up best poster award (ACM Women in Computing).