Highlights

Graph neural networks for operational risk assessment under evolving grid topology

Yadong Zhang, Pranav M Karve, Sankaran Mahadevan

- Graph neural network as a computationally efficient optimization proxy for hours-ahead operational risk assessment
- Reliability and risk assessment at system, zone and branch levels by considering evolution of grid state over the next few hours
- Load shedding and branch overloading as failure modes
- Methodology demonstrated using large, synthetic power grids (Case1354pegase, Case2848rte)