

AI in Modern Power and Energy Systems!

Driven by global environmental emission issues and tighter requirements for system resilience and reliability, electricity production is shifting from a centralized paradigm to a decentralized one. In this context, renewable energy sources (RES) and electric vehicles (EVs) have proliferated over the past decade, exhibiting a steadily increasing trend. Thus, today, a large number of wind turbines, photovoltaic (PV) panels, and EVs are connected to medium- (1-69 kV) and low-voltage (=1 kV) grids, with traditional integrated bulk power systems becoming decentralized in the presence of active distribution networks, where the flow of power is bidirectional between generators and "prosumers". Such systems are typified by a high penetration of metering infrastructures, generating a large volume of data, providing the opportunity to harness the power of big data using data-driven techniques.

This seminar discusses the use of artificial intelligence (AI) in modern power and energy systems, in particular electrical distribution networks. Real-world examples of the use of AI for energy storage systems optimization and control will be provided and discussed.

Key Focus

- What are modern power systems control and optimization issues?
- How data-driven techniques can help?
- What is the state-of-the-art?
- What is the path forward?

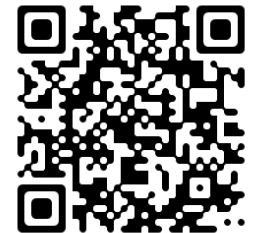
Admission is FREE! Everyone is welcome! Registration is required!

RSVP: <https://forms.gle/BR5hULmPG3MvKjaJ9>

Location: 4359 Mackenzie Building, Carleton University.

Date and Time: March 4th, 2020 at 6:00 – 7:30 PM

RSVP



BIOGRAPHY:

Dr. Mostafa Farrokhbabadi is the Senior Director of Technology at BluWave-ai. Concurrently, he serves as Associate Editor of IEEE Transactions on Smart Grid. He has more than 8 years of experience in designing mission critical grid solutions for industry and academia, including technical leadership of a \$6M international consortium in electric grid modernization, and smart grids projects with Hatch and Canadian Solar. Mostafa has (co)authored several articles in high-impact journals, conference proceedings, and magazines, and holds patents on intelligent control and optimization of renewable-penetrated grids. Mostafa has also led the award-winning IEEE Power and Energy Society Task Force on microgrid stability, an international coalition of 21 researchers from 14 institutions investigating stability issues in microgrids. Mostafa obtained his PhD in Electrical and Computer Engineering from the University of Waterloo. He has also studied and performed research in Sweden at KTH and Germany at KIT. During the course of his career, Mostafa has received multiple business, research, and teaching awards, including the prestigious University of Waterloo Doctoral Thesis Completion Award and Ottawa's Forty Under 40.

