IEEE BDA Webinar Series: Big Data & Analytics for Power Systems

Application of Machine Learning to Power Grid Analysis

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Abstract: After the AlphaGo winning game, there is a renewed interest in artificial intelligence, especially in the area of Machine Learning, in the power engineering community. This Webinar will give a general overview of Machine Learning and its potential application to power grid analysis. It will include two parts. In the first part, an open platform for exploring the application of Machine Learning to power grid analysis will be introduced, including the discussion of its architecture, and some sample application scenarios. The platform is based on the integration of InterPSS, an open source power grid simulation software project, and TensorFlow, Google's Machine Learning engine; In the second part, some of our recent on-going research work in the area of applying Machine Learning to perform fast power system dynamic security assessment (DSA) will be presented, including some preliminary results of the application of Machine Learning to a large-scale power network for the DSA analysis.

Bio: Mike Zhou (M'90) obtained his B.S. from Hunan University, M.S. and PhD. from Tsinghua University. He was an assistant professor at University of Saskatchewan 1990-1992, served as the VP in charging of power distribution system software development at EDSA Micro Corporation 1992-1997. He was a Senior Computer System Architect with TIBCO Software Inc. 2000-2014. He joined State Grid Electric Power Research Institute of China as a Chief Scientist in 2014, sponsored by the "Thousand Talents Plan" program. His current research interests include Big Data and Machine Learning technologies, and their application to large-scale power grid on-line analysis.

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