USING MACHINE LEARNING ACROSS HYDROPOWER UNITS WITH THE HYDROPOWER RESEARCH INSTITUTE (HRI) DATA

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[https://wsu.zoom.us/j/5226526738]

OVERVIEW

Aggregating data across people, homes and phones has led to data-driven decisions for large technology companies (e.g., Google) for decades now. The digital transformation being driven by new businesses entering this arena to make data-driven decisions is leading to new value being established for previously under used data. The Hydropower Research Institute (HRI) is a hydropower owner-driven organization focused on building a data set containing operational data from across companies, sites and hydropower units to increase the value of the data by reducing operation and maintenance costs. The HRI data set has been used in establishing a machine learning powered digital twin by aggregating data across a hydropower units’ subsystems. The data is also being used to develop signatures (i.e., anomalies) from data traces using historical data to match with unplanned outages or maintenance events in the units. These digital signatures may apply across similarly manufactured units so monitoring for the anomalies may provide advanced notice of required maintenance or pending failure. The HRI data set is growing and will provide additional opportunities for more artificial intelligence (AI) applications and research and development.

BIO

Scott Smyth graduated with a MS and PhD in Earth and Atmospheric Sciences from the Georgia Institute of Technology in Atlanta after receiving a BS in Environmental Earth Sciences at Stanford University in California. He is a senior consultant in the Digital Transformation (DT) practice for Sapere Consulting. Scott is responsible for software architecture and development, data analytics and business development in the DT practice. In his 15 years at Sapere Consulting, Scott has led projects in artificial intelligence (AI), digital storage research and development, and data storage and data analysis product development. He has played key roles in software development at the engineer, director and CTO levels as a consultant. Prior to joining Sapere Consulting in 2005, Scott worked in the data storage industry in Silicon Valley serving as engineer and director of software development for several companies. Scott was involved in Open Source Software (OSS) development and integrating OSS projects into data storage products during that time.