Environmental and Water Resources Engineering Seminar Series

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Deep Learning and Geospatial Techniques in Agriculture Management

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Deep Learning (DL) is gaining considerable significance in various domains of water resources and agricultural engineering due to its capability to learn unknown non-linear processes, dimensionality reduction, data mining, and bid data processing. Common DL networks such as Deep Neural Networks (DNN), Convolution Neural Networks (CNN), Auto Encoders (AE), and Recurrent Neural Networks (RNN) will be discussed. DL applications in agriculture management with a few case studies using microwave and hyperspectral remote sensing data will be presented. They include generating crop maps by applying CNN on multi-temporal Sentinel-1 data, canopy averaged chlorophyll content prediction of pear trees using convolutional auto-encoder features of hyperspectral data among other applications.