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3:30 PM

**Research & Innovation
Centre Room 209
and Zoom**



Machine Learning for Functional Data

Functional data analysis (FDA) is a growing statistical field for analyzing curves, images, or any multidimensional functions, in which each random function is treated as a sample element. Functional data is found commonly in many applications such as longitudinal studies and brain imaging. In this talk, I will present a methodology for integrating functional data into deep neural networks. The model is defined for scalar responses with multiple functional and scalar covariates. A by-product of the method is a set of dynamic functional weights that can be visualized during the optimization process. This visualization leads to greater interpretability of the relationship between the covariates and the response relative to conventional neural networks. The model is shown to perform well in a number of contexts including prediction of new data and recovery of the true underlying relationship between the functional covariate and scalar response; these results were confirmed through real data applications and simulation studies.

Live streamed on Zoom. Register in advance for link:

<https://uregina-ca.zoom.us/meeting/register/tJcrcO6opzgrHdVzbWqHTk2AOcqblkqp26iF>