Departmental Colloquium

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November 19th, 2025, Knott Hall B03 3:00 PM,
Zoom link : https://loyola.zoom.us/j/81031149427
Meeting ID: Meeting ID: 810 3114 9427
Passcode: mathstat

Real data-driven survival modeling for cancer prognostics: A comparative study with machine learning and traditional survival modeling methods

Abstract

This investigation delves into the potential application of data-driven survival modeling approaches for prognostic assessments of cancer survival. The primary objective is to evaluate and compare the ability of machine learning (ML) models and conventional survival analysis techniques, to identify consistent key predictors of cancer survival outcomes. This study employs real data-driven survival modeling approaches to predict cancer survival, including survival-specific methods such as the Cox Proportional Hazards (CPH) model, Random Survival Forests (RSF), and Cox Proportional Deep Neural Networks (DeepSurv). To ensure interpretability across all models, the Shapley Additive Explanation (SHAP) method was applied to RSF and DeepSurv. This enabled the identification of key predictors influencing cancer survival, highlighting consistent factors across models while uncovering unique insights specific to each approach. The performance of survival-specific models was evaluated using the Concordance index (C-index), Integrated Brier Score (IBS), mean accuracy, and mean AUC.

This talk is geared towards students .

Refreshments will be served.

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