CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Wednesday, December 4
11:30 – 12:30 PM
Copernicus Hall (NC), Room 22409

APPLYING COST BENEFIT ANALYSIS
TO A TRINARY CLASSIFICATION MODEL

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(Data Mining MS Thesis Presentation)

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Abstract: The key objective of the thesis is to demonstrate how cost benefit analysis can be used on loan issuance scenarios beyond a binary target. The thesis will apply cost benefit analysis and misclassification costs to classification models with a trinary target. This extends the traditional approach of binary target classification and analysis to the trinary case. In a highly volatile economic environment, businesses are turning more and more to data analytics to enhance their current business models. Throughout the financial industry, companies are looking to be an analytic competitor opposed to previous models where 'gut' feelings and 'sound bites' were the basis of decisions. The approach presented here should help enhance analysis for companies looking to increase margins by adding an additional option to the binary classification models used today. What this thesis offers is a template for applying cost benefit analysis to classification models containing three target variables. The loan issuance case study used reflects how applying this analysis can help identify appropriate models by comparing results. In the case study, two models are being compared for the trinary case. A trinary target model is created using the C5.0 algorithm in IBM SPSS Modeler 15.0. The first model created does not use misclassification costs and the second model does. Applying misclassification costs gave better revenue results.

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