CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Thursday, April 25
3:00 – 4:00 PM
Maria Sanford Hall, Room 101

APPLYING DATA MINING TECHNIQUES IN CLASSIFYING PERSONAL AUTOMOBILE INSURANCE RISK

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(Data Mining MS Thesis Presentation)

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Abstract: Because personal automobile insurance is mandated in most states for every licensed vehicle, it can become highly regulated by state legislatures. In Massachusetts, personal automobile insurance is mandatory before any vehicle can be registered. Each insurance company is required to provide insurance to anyone requesting it. This is called a "Take-All-Comers" rule. The insurance company must provide mandatory coverage; however, providing optional coverage is left to the insurers' discretion. Additionally, and most important, the insurance company has the right to "cede" the insured to a reinsurance facility, which means passing along all premiums collected, and claims dollars paid. This reinsurance facility has always suffered operating losses, or deficits, which are redistributed back to the companies who reinsured with them, using a complicated formula. Every time a company cedes a risk to the reinsurance facility, it does so knowing that it will receive a larger share of this deficit. This is fundamentally the most important underwriting decision that Company X needs to make: whether to retain the premiums and claims payments from any given policy, or to cede these amounts to the reinsurance facility. The economic viability of the company hinges entirely on this decision. This thesis proposes that a statistical model can be developed which can effectively predict claims payments across the spectrum of policyholder classifications. Historical data from Company X will be evaluated in accordance with established CRISP-DM guidelines to train and test this model. These predicted payments will be compared with known policy premiums and combined with the reinsurance facility deficit redistribution logic to form an algorithm that will profitably decide which policies should be ceded to the reinsurance facility.