



The University of Chicago
Department of Statistics
Master's Seminar

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“Modeling Hidden Exposures in Claim Severity”

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ABSTRACT

The paper called “Modeling Hidden Exposures in Claim Severity via the EM Algorithm” by Grzegorz A. Rempala and Richard A. Derrig (2005) explores the expectation-maximization (EM) algorithm as a convenient tool in detecting hidden parameters in finite mixture models. Using real-life auto injury claim data, the authors’ eventual goal is to find a method for discriminating actual abusive claims from other claims. In our paper, we recreate the authors’ analysis using the same data and their actual EM algorithm code. We confirm the results by running other software, Mclust, for model-based clustering, density estimation and discriminant analysis. Furthermore, we take account of some other factors than the authors have mentioned in their paper individually as well as in a multivariate setting and discover how hidden factors help to differentiate the data by an abusive provider. Also, we shall illustrate the use of logistic regression as another classification tool.