

Casualty Actuaries of Greater New York

Spring 2021 Meeting - Virtual

Agenda

9:00 AM 9:05 AM **Welcome Remarks**

9:05 AM 9:55 AM **Session 1 - Machine Learning on Estimation of Claim Liabilities**

Marco De Virgilis, Allstate

The intent of the session is to show and to inform the audience on how to implement machine learning (ML) algorithms in the framework of calculating Claim Liabilities. Traditional methodologies based on aggregated data in the form of run-off triangles have limitations while more sophisticated tools and models based on ML algorithms are capable of overcoming drawbacks of standard approaches, namely, accuracy and timeliness of estimates. We will present results achieved alongside advantages and disadvantages, ie. issues that may be encountered in a corporate production environment when transitioning from standard approaches to more sophisticated ones.

9:55 AM 10:45 AM **Session 2 - When is Premium Riskier Than Loss?**

Stephen Mildenhall

This session will describe different approaches to measuring and modeling underwriting risk, based on US statutory data. It will show that for some lines there is more uncertainty in premiums than there is in losses. It will look at the data at three different levels of detail. First, it will analyze the underwriting cycle using a unique time series back to 1923. Second, it will look at aggregate volatility based on components of net income since 1986. Third, it will analyze the dynamics of loss, premium and loss ratio by major line grouping since 1992. The talk will conclude by discussing applications of the findings to pricing, portfolio optimization, ERM and capital modeling.

10:45 AM 10:55 AM **Break**

10:55 AM 11:55 AM **Session 3 - Cyber Risk Insurance**

Norman Niami, Chairperson, Academy Cyber Risk Task Force (CRTF)

Introduction and discussion on recent papers and upcoming research and papers of the Cyber Risk Task Force of the American Academy of Actuaries.

11:55 AM 12:15 PM **Session 4 - CAGNY Business Session**

CAGNY Board

The CAGNY Board will present CAGNY's financial report, announce the scholarship winners, and will hold elections for officers for the coming year.

12:15 PM 1:15 PM **Lunch**

1:15 PM 2:15 PM **Session 5 - Fraud**

Ben Turner, FraudSpotters

Ben Turner from FraudSpotters, in a far ranging discussion, will talk about some life experiences using statistics to evaluate legitimate medical providers, fraudulent medical providers, lawsuits, randomness in general processes using the 2020 election as an example, and will also discuss using publicly available databases to augment analysis.

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2:15 PM 3:05 PM **Session 6 - Telematics in Ratemaking**
Roxane Turcotte, Université du Québec à Montréal
Francis Duval, Université du Québec à Montréal

In Pay-As-You-Drive (PAYD) automobile insurance, the premium is fixed based on the distance traveled, while in usage-based insurance (UBI) the driving patterns of the policyholder are also considered. In those schemes, drivers who drive more pay a higher premium compared to those with the same characteristics who drive only occasionally, because the former are more exposed to the risk of accident. In this presentation, we analyze the simultaneous effect of the distance traveled and exposure time on the risk of accident. Count data distributions based on duration models, where the waiting time or the “waiting distance” between claims are considered will be presented. Semi-parametric models, using Generalized Additive Models (GAM) or Generalized Additive Model for Location, Scale and Shape (GAMLSS) will also be applied using real insurance data. We show how the expected number of claims stabilizes once a certain number of accumulated distance-driven is reached, and propose some explanations to understand this phenomena.

3:05 PM 3:15 PM **Break**

3:15 PM 4:05 PM **Session 7 - Human Values in the Loop: Thinking Through the Ethics of AI**
Jim Guszczka, Deloitte Consulting

Just as actuaries are arguably the original data scientists, they have long dealt with an aspect of a broader issue that has become prevalent: the ethics of algorithmic systems. This session will propose a general framework for conceptualizing and deliberating the ethical issues and tradeoffs presented by modern AI technologies. These broader principles will be related to such issues as algorithmic fairness, actuarial fairness, human-machine collaboration, and the ethics of “nudge”.

4:05 PM 4:55 PM **Session 8 - Professionalism and Modeling, a look at ASOP 56 and ASOP 38**
Ken Williams, Casualty Actuarial Society

As the insurance industry evolves, actuarial work is becoming more and more focused on developing and using models to help drive actuarial decisions. This interactive session will use a combination of case studies and audience questions to introduce or refresh your knowledge of new ASOP 56 (Modeling) along with current ASOP 38 (Using Models Outside the Actuary’s Area of Expertise).