



How the Casualty Actuarial Society Is Breaking the Mould

Presented by:

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Agenda

- CAS Highlights
- Data Science and Predictive Analytics
 - Introduce MAS-I and II to Basic Education
 - The CAS Institute
- Case Studies of Nontraditional Roles





CAS Highlights

- Approximately 8,000 members
 - Increasing international focus
 - Still largely in US and Canada
 - Many members practice in Caribbean
- The only actuarial body dedicated solely to education and research in casualty insurance
- The Gold Standard for P&C actuarial education



Basic Education Strategy

- Determining the basic education for the actuary of the future and adjusting the CAS system accordingly
- Revising to cover data science and predictive analytics
- Adding in 2018 Modern Actuarial Statistics exams
 - MAS-I and MAS-II



MAS-I & II

Predictive Analytics

MAS-I: In a Nutshell

- Very similar to Exam S.
- A bit more on GLMs and applications.
- 4 hour paper & pencil exam; twice per year; multiple-choice.

MAS-I: Transition Plan

- First sitting spring 2018.
- Exam S gets you MAS-I.

MAS-I: Key Topics

- Probability Models (Stochastic Processes and Survival Models)
- Statistics
- Extended Linear Models
- Time Series with Constant Variance

MAS-II: In a Nutshell

- Opportunity to deepen stats content.
- 4 hour paper and pencil; twice per year; multiple choice.

MAS-II: Transition Plan

- First sitting fall 2018.
- Exam C gets you MAS-II.

MAS-II: Key Topics

- Introduction to Credibility
- Linear Mixed Models
- Bayesian Analysis and Markov Chain Monte Carlo
- Statistical Learning



Basic Education: In Summary

- Constantly being adapted and refreshed
 - Emergence of new P&C risks and coverages
 - New era of Big Data and Big Data methods
- Curriculum reflects experience of practicing actuaries who understand what is required to practice in casualty actuarial field



The CAS is moving aggressively to address data science education

- Adding substantial data science and predictive analytics material to CAS actuarial exams in 2018
- Piloting “boot camps” to support more effective basic and continuing education
- Creating a Certified Specialist in Predictive Analytics (CSPA) credential for actuaries and non-actuaries
 - The CAS Institute (“iCAS”) formed as CAS subsidiary
- Building a practice community for insurance data science



The CAS Institute



thecasinstitute.org



The CAS Institute Facts & Figures

- 365 Members
- 60% CAS Members 62%
- 15 Countries Represented
- 150 Companies Represented
- 78 CSPA's Awarded via Experienced Practitioner Pathway
- Exam Registrations: 58 CSPA1 / 86 CSPA2



CSPA Credential Requirements: Overview of Assessments

1. Property - Casualty Insurance Fundamentals
2. Data Concepts and Visualization
3. Predictive Modeling – Methods and Techniques
4. Case Study Project: P&C Predictive Modeling Application
5. Online Course on Ethics and Professionalism



Case Studies





Kevin Kuo, ACAS



- Software Engineer, RStudio
- Career Path: KPMG, CitiBank, KPMG, Honeywell
- Enhance R's open-source ecosystem to offer big data and deep learning capabilities to R users
- “Leverage ... experience working with quantitative problems in a business context”



Aaron Fezatte, ACAS



- Strategy Manager, Expedia
- Career Path: pricing and analytics at Liberty Mutual
- Works with insurers to develop travel products to meet needs of customers around the world
- *“Don’t be afraid of titles that do not say actuary.”*





Cathine Lam, ACAS



- Data Scientist, Metabiota (a biotechnology co.)
- Career Path: eight years as actuarial consultant at Milliman
- Produce realistic modeled loss cost outcomes to allow clients to develop coverage or policy planning
- “Think of big data and technology as tools that can help you along the way.”



Frank Chang, FCAS



- Director of Insurance & Safety Analytics, Uber
- Career Path: PhD, Motley Fool, Firemen's Fund, Google
- Collects detailed info from Uber apps to glean added insight
- *“Non traditional roles require applicants who want to work in creative environment.”*



Questions and Discussion

