6. Weiterbildungstag der DGVFM

DGVFM
DEUTSCHE GESELLSCHAFT
FÜR VERSICHERUNGS- UND
FINANZMATHEMATIK e.V.

"Machine Learning"

Datum: 16. Mai 2019
Ort: VGH Versicherungen
Schiffgraben 4, 30159 Hannover

Beginn: 10:00 Uhr
Ende: 17:00 Uhr

Programm

10:00 Uhr	**Begrüßung** Manfred Schnieders (Vorstand, VGH) Prof. Dr. Stefan Weber (Leibniz Universität Hannover)
10:15 Uhr	**Mathematical Aspects of Machine Learning** Prof. Dr. Gareth W. Peters (Heriot-Watt University Edinburgh)
11:45 Uhr	**Mittagsbuffet**
13:00 Uhr	**Deep Learning in Text Mining and Image Recognition** Dr. Andreas Nawroth (MunichRe)
14:30 Uhr	**Kaffeepause**
15:00 Uhr	**Machine Learning in Life Insurance—Searching for Patterns in Cash Flows** Pierre Joos (Allianz)
16:30 Uhr	**Fragen, Diskussion und Ausblick**
17:00 Uhr	**Ende der Veranstaltung**

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Vorträge

Prof. Gareth W. Peters
„Feature Extraction for Machine Learning Data-Driven Innovation in Mortality Projection."

In this presentation, we will explore a range of different methods to perform feature extraction in mortality time series data. The features will then be incorporated into state space modelling structures as well as extended Generalised Linear Models adapted for time series to enhance classical Lee Carter Period-Cohort type mortality models. Results will be studied on national level statistics for mortality for a range of different countries.

Dr. Andreas Nawroth
„Deep Learning in Text Mining and Image Recognition"

The talk will introduce the basic foundations of neural networks and provide a motivation for Deep Learning approaches in the insurance industry. Basic steps and problems in the application of text mining will be shown. The historical review of the current developments will show the fast progress of the field and potential applications. Then more complex models are analyzed and benchmark performance figures are provided. The talk will be concluded by serval examples of Deep Learning in the insurance industry.

Pierre Joos
„Machine Learning in Life Insurance - Searching for Patterns in Cash Flows"

Stochastic Cash Flow Models are at the heart of internal models for life insurance. They are used to project the payments to policy holders and future profits of the shareholders over the full duration of the contracts. However, the interactions of capital market scenarios, product features and management rules within a SCFM are complex and often difficult to comprehend. We will show a new approach using Machine Learning methods to analyse patterns in the SCFMs core outputs as Present Value of Future Profits. We will further give an introduction to classic ML methods and how they can be used to predict PVFPs in a given capital market scenario quickly. Finally, we will discuss the pros and cons of these new models vs. classical statistical models.