

Title

Actuarial Applications of Natural Language Processing Using Transformers: Case Studies for Using Text Features in an Actuarial Context

Speaker/Company

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Abstract

This talk demonstrates workflows to incorporate text data into actuarial classification and regression tasks. The main focus is on methods employing transformer-based models. The talk provides practical approaches to handle classification tasks in situations with no or only few labeled data. A dataset with short property insurance claims descriptions is used to demonstrate the techniques. The results achieved by using the language-understanding skills of off-the-shelf natural language processing (NLP) models with only minimal pre-processing and fine-tuning clearly demonstrate the power of transfer learning for practical applications.

This case study has been done as part of the “Data Science” working group of the Swiss Association of Actuaries (SAA). The group publishes tutorials that discuss the use of machine learning techniques for actuarial applications. The tutorials are self-explanatory and its code and data is publicly available on the website www.actuarialdatascience.org.

Biography

Dr. Jürg Schelldorfer is a Senior Actuarial Data Scientist in the Advanced Analytics Center of Excellence (CoE) at Swiss Re. He is a fully qualified actuary of the Swiss Association of Actuaries (SAA) and the head of the SAA Actuarial Data Science working party from 2017 - 2022. In 2018, he was a visiting lecturer at the University of Basel. Previously, he worked for KPMG Switzerland and AXA Switzerland as a non-life actuary. He studied mathematics at the ETH Zurich and received his doctorate in statistics from the same institution. machine learning applied to insurance, data engineering, and data visualisation.
