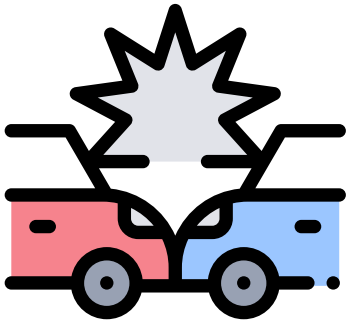
Motor insurance pricing engine development

Accurately assessing the insurance risk of motor-vehicle cover

Benefit

More accurately quantify the insurance risk of any vehicle in the market so that upfront risk can be appropriately priced to minimise the overall risk on the portfolio



Context

The pricing of motor policies requires the accurate assessment and quantification of all risks for which the insurer provides cover. This includes accident risk for both the insured and third-party exposure, theft risk, weather damage risk and public liability risk. These risks may vary substantially across the many vehicle types, models, ages and conditions in a market. Underpricing can result in large insurance losses. Overpricing can result in premiums being uncompetitive in the market.

Methodology

Motor pricing is a well-trodden area in actuarial work and traditional actuarial methods exist for pricing. In order to demonstrate the value of machine learning, the same policy and claim data that were used to train the traditional models were used to train a variety of machine-learning based models. Claims data were classified by the type of claim and claim amounts were also indicated. Policy data included data relating to the insured vehicle as well as the policyholder and designated drivers.

Results

24%

increase in the accuracy of the risk premiums over the insurer's motor portfolio over all risks

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