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Creating Business Value, Driven by Data Intelligence

CASE STUDY

General insurance pricing for a South African insurer

CASE STUDY

Case Study I

General Insurance Pricing for a South African Insurer

Addressing data gaps and enhancing data integrity in insurance pricing

CASE STUDY

Overview

A South African insurer embarked on a critical initiative to refine its general insurance pricing model. The project aimed to group exposure and claims data at a more granular level, ensuring consistency.

Challenge

- General insurance pricing
- The insurer's pricing process was not granular enough, partially due to incomplete claims data, specifically:
  - Missing Member Information: The member who made the claim was often unrecorded.
  - Incomplete Benefit Information: The product benefit associated with the claim was sometimes not provided.

Data

The project involved bucketing exposure and claims data into consistent buckets at a granular level, including:

- Member (Main, Spouse, Children, Adult Dependents)
- Product (Risk, Disability, Income Protection) and Claim Type
- Member Gender
- Sum Assured Bands
- Age Bands
- Exposure Year
- Claim Year

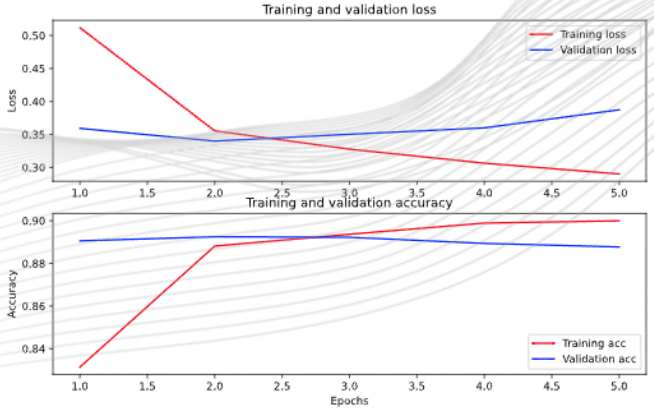
Tools & Technologies

- Zeppelin notebook environment
- Python
- Spark SQL
- Tensorflow neural network

CASE STUDY

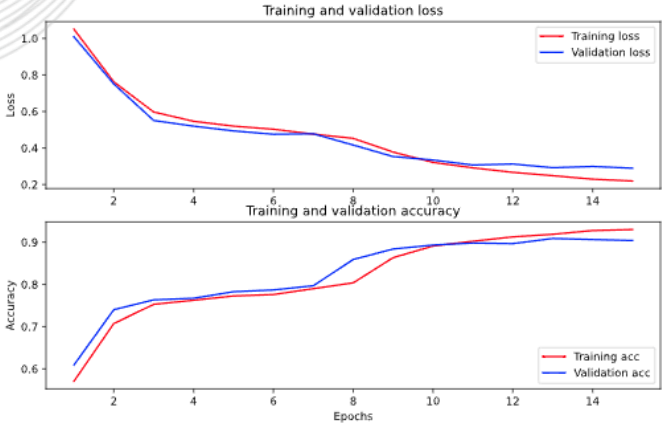
Solution Approach

- Data Review and Initial Fixes:
  - Thoroughly examined available data, including policy, benefit, member, and claim descriptions.
  - Implemented straightforward fixes, such as inferring the claimed product when a policy contained only one product.
- Neural Network Implementation:
  - Developed and trained a TensorFlow Neural Network using the available data (including claim descriptions), segmented into training and validation datasets where claimant and member details were present.
  - Tested the model's accuracy using the validation data.



Outcomes

- Model Application and Data Correction: The trained model was applied across the dataset, identifying and correcting inaccuracies where claimants and benefits were missing recorded.
- Successful Continuation of Pricing Exercise: The correction of data issues allowed us to proceed with the pricing exercise with greater confidence and accuracy, ensuring a more robust pricing strategy moving forward.
  - Achieved 89% accuracy in predicting missing claimants (members).
  - Achieved 90% accuracy in predicting missing benefits.



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