



TRAININGS 2020-03

NEURAL NETWORKS FOR INSURANCE

Brussels – 10 March 2020



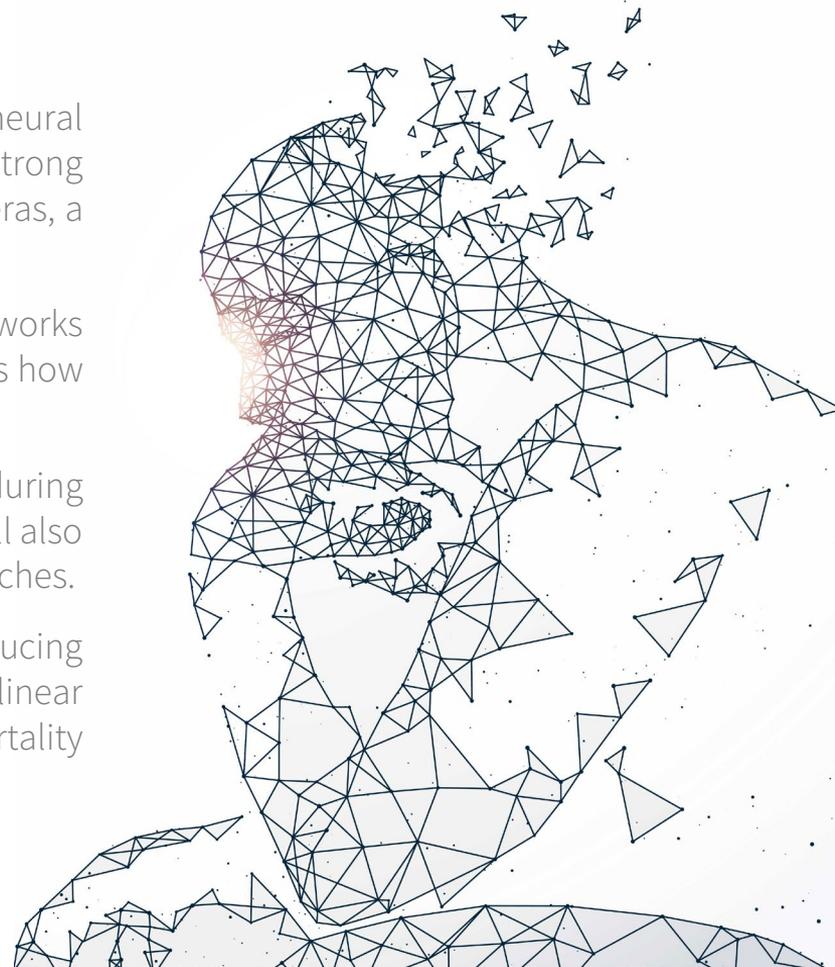
NEURAL NETWORKS FOR INSURANCE

The purpose of this training is to introduce participants to neural networks for actuarial pricing. The presentation places a strong emphasis on the practical implementation of these models in Keras, a R library.

We start this course by a review of concepts behind neural networks and calibration methods. A case study (Wasa database) illustrates how to use neural networks for non-life insurance pricing.

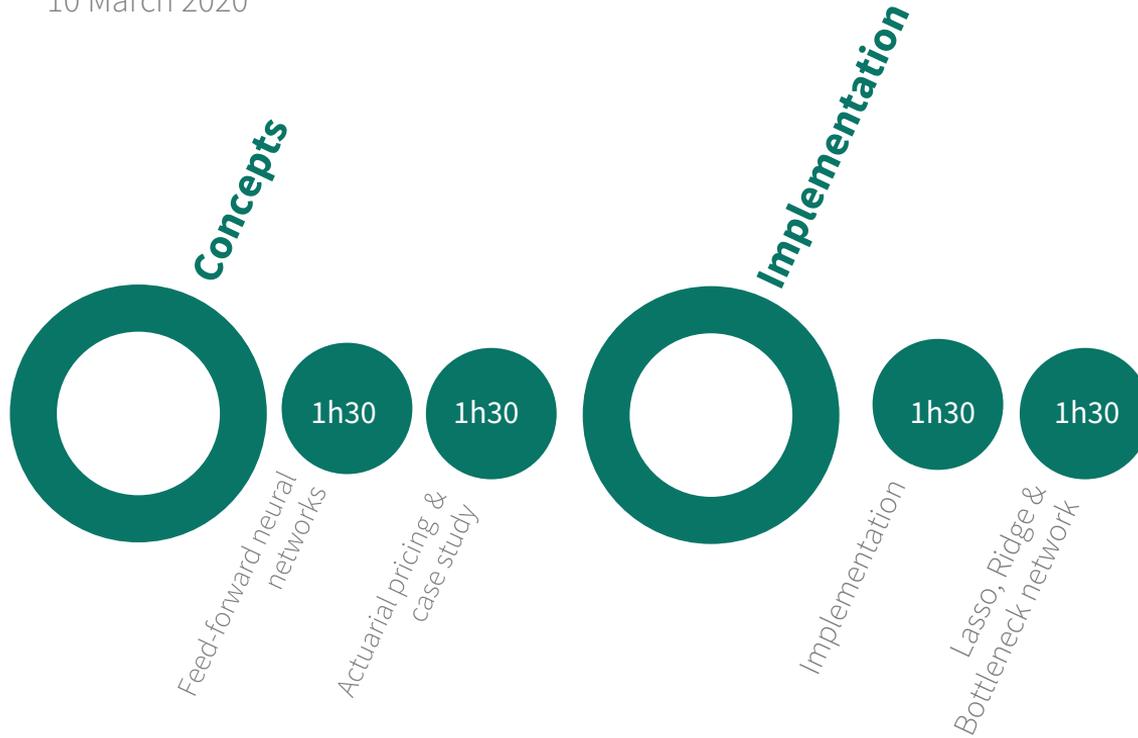
This is followed by an introduction to NeuralNet and Keras during which participants can test the R code used in illustrations. We will also see how to fight overfitting with dropout, Lasso and Ridge approaches.

Finally, we show how bottleneck neural networks are used for reducing the dimension of a dataset, acting in a similar way to a non-linear principal component analysis. We illustrate this technique on mortality forecasting. R code will be provided to participants.



AGENDA

10 March 2020



CONCEPTS :

- Introduction to feed-forward neural networks
- Training of supervised networks
- Application to non-life actuarial pricing
- Case study: the Wasa dataset

PRACTICAL IMPLEMENTATION:

- Implementation: Excel, NeuralNet and Keras
- Cross Validation
- Fighting overfitting: Lasso & Ridge
- Bottleneck network: an application to mortality forecasting

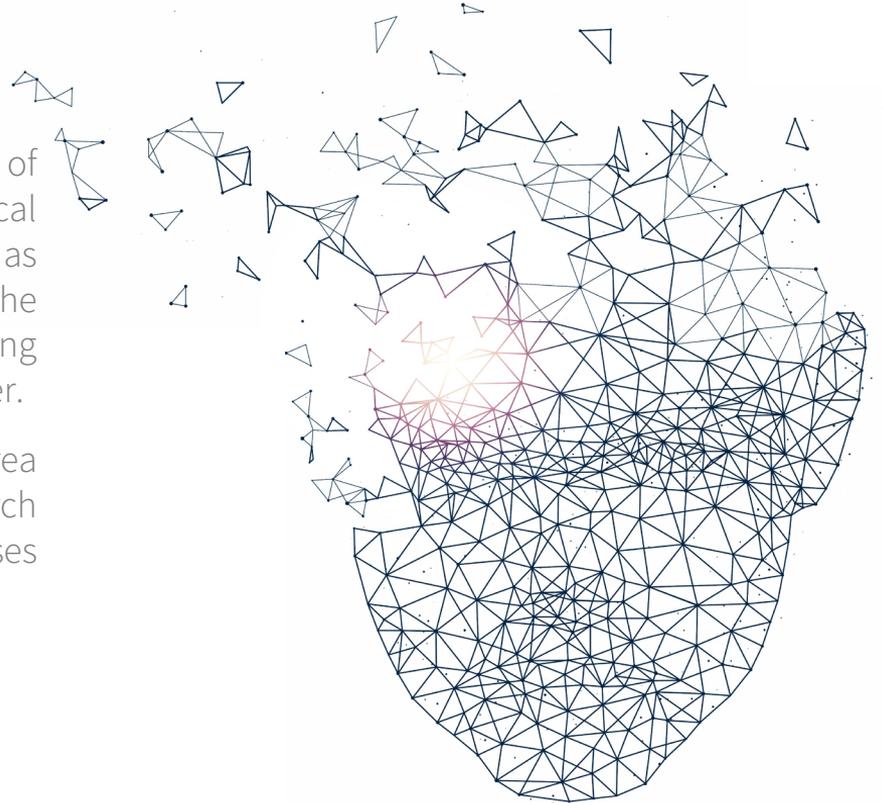
SPEAKER

About

Donatien Hainaut is Scientific Director at Detralytics.

Donatien is professor at UCLouvain where he is Director of the new Master program in Data Science, statistical orientation. Prior to this he held several positions as associate professor at Rennes School of Business and the ENSAE in Paris. He also has several field experiences having worked as Risk Officer, Quantitative Analyst and ALM Officer.

Donatien is a Qualified Actuary and holds a PhD in the area of Assets and Liability Management. His current research focuses on contagion mechanism in stochastic processes and applications of neural networks to insurance.



PRACTICAL INFORMATION



The training will take place in Detralytic's offices in Brussels



The 1-day training is 550 € excl. VAT
Early bird price of 475 € (before February 15th)



The training will be given in English



A computer with R and Keras is needed for the practical parts



6 IABE-points are attributed to participants



For subscription, as any other questions: info@detralytics.eu