

## Tutorial 10

- 10.1 Using the R codes in the lecture slides, perform the following tasks:
- (a) Apply the one-layer feedforward neural network to Australian male (log) death rates in year 2018 (for ages 0-89), with age as the main feature.
  - (b) Plot the observed and fitted (log) death rates in year 2018 over age.
  - (c) Comment on the network size, goodness-of-fit, and generalisation.
- 10.2 Modifying the R codes in the lecture slides, perform the following tasks:
- (a) Apply the one-layer feedforward neural network to the individual claims data provided, with the line of business as the target (classification) and the claim size and time to settlement as the two main features. Note that it is a classification problem here (0 or 1) and there is no need to normalise the observed target values.
  - (b) Plot the actual categories and the model classifications on an  $xy$ -plane over the two features.
  - (c) Comment on the network size, goodness-of-fit, and generalisation.

Note: Validation and testing will be covered in the assignment.