

M3/4S16 CREDIT SCORING COURSEWORK 2018 PART 2

In this exercise you will continue using the personal loan data set you downloaded in Part 1. You will try using some of the techniques you used on the course to improve your model. You will use the R statistical language for your work and report the methods you use and your results in a written report.

Total contribution to assessment: 15%.

TIMESCALE

Your coursework must be submitted by 4pm on Tuesday 8th January 2019.

INSTRUCTIONS

1. Apply some of the techniques you have learned so far on the Credit Scoring course to improve the model you built in the Part 1 coursework. You can make use of any of the variables supplied in the data set. Use AUC as your performance measure to determine which model is best.

When doing this work, you should consider methods dealing with:-

- a) Data preparation and validation.
 - b) Variable selection.
 - c) Model structure. Consider including interaction terms or building a segmented model.
 - d) Testing. How will you use your data to ensure testing is performed correctly?
2. The lender is also interested in building separate models for each loan term for marketing purposes. Investigate this option and provide a recommendation on whether the lender should do this.
 3. Write a report describing the methods you tried and the results you achieved. Report the final model you tried that performed best and give an interpretation of it, especially in contrast to the model you built in Part 1. As a guide, your report should be between 4 and 8 pages. Submit your report as a paper copy to the undergraduate office and electronically by email to a.bellotti@imperial.ac.uk with subject

heading "M34S16 CW2". Do not include R code in your report. Please include R code in your email as a *separate file*.

Notes:-

- (1) The emphasis here is on the quality of your work, rather than quantity. You can achieve more marks by applying a few techniques well, rather than doing many poorly.
- (2) Do not worry if you do not achieve a large performance improvement, or an improvement at all. Marks will be given for demonstrating good choice and implementation of techniques, not the final outcome.
- (3) Marks will be given for good explanation of your work and for presentation.