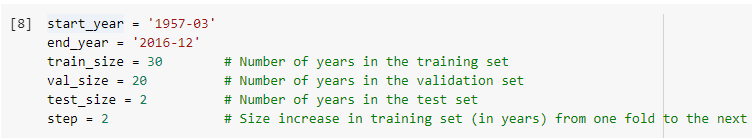
**BDFII Assignment Screenshots**

A blue and orange bar graph

Description automatically generated with low confidenceA screenshot of a graph

Description automatically generated with low confidenceRolling window validation settings and visualisation:

**Q1 – Hyperparameter tuning (run time: 40min per model)**

**- With more memory space: should add ensemble=10**

**A screenshot of a table

Description automatically generated with low confidenceA screenshot of a table

Description automatically generated with low confidenceA picture containing text, screenshot, font, number

Description automatically generatedFull result for NN2, NN3 and NN4**

**A screenshot of a computer screen

Description automatically generated with low confidenceA screenshot of a calculator

Description automatically generated with medium confidenceA picture containing text, screenshot, font, number

Description automatically generatedWinning folds for each model**

**Q2 – Run best models (best set of hyperparameter) on test set (run time: 5min per model)**

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Description automatically generatedAll Folds**

******Mean Score:**

\*NN3 is the best performing model (out-of-sample).

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Description automatically generatedQ3a: Top 10 variable importance (run time: 30 sec per variable, about 1hr in total)**

**Q3b: Get a measure of joint importance of all macro predictors**

Note: drop in R2\_OOS after setting macro variables to zero is much greater than stock characteristics. This suggests that macroeconomic condition (economic regime) has a bigger impact on individual stocks return than stock characteristics.

**Q3c: Get measure of sensitivity:**

**A screenshot of a computer

Description automatically generated with low confidence> For stock characteristics (run time: 1 hr):**

**> For all macro variables (joint):**

**Q4. Fit Penalised linear model (LASSO)**

**> Tuning of penalty (run time: 3 min)**

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Description automatically generated> Out of Sample Testing (run time: 30 sec)**

Note: R^2 OOS of LASSO model not as high as R^2 OOS of neural networks (expected)