**Peer review sheet**

MAFS6010Z, 2021 fall

Your name and sid: MA RUI 20736954

Group that you review:

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| --- | --- | --- | --- | --- |
|  | Confidence on your assessment (1-3) | Clarity and quality of writing (1-5) | Technical quality  (1-5) | Overall rating  (1-5) |
| Score | 3 | 4 | 5 | 5 |

Summary:

This report follows the appendix in the original paper to evaluate the performance of the CNN image classifier by comparing the accuracy, correlations and Sharpe ratios of variation of hyperparameters and visualize the returns of long-short portfolios, By comparing the loss and accuracy on validation and test, this report draws the conclusion that the differences between variant models are small, suggesting that no single hyperparameter plays a significant role in the classification. Besides, the change of layers has the most significant impact on the model performance and the returns over time, which means the baseline is given by the paper still has the space for improvement. As for the overall evaluation of the entire replication process, this report believes that although the model results are replicable, and the idea is instructive, the practicality of the paper is still low because of the low classification accuracy.

Strengths:

The whole report not only perfectly replicates the framework of the original paper and tries different hyperparameter of testing robustness, but also visualizes its detailed performance of its portfolio construction. Besides, the numerical selection of these two parameters, larger batch size of 1280 and learning rate scaled up by the same multiplier, is very creative. At the same time, this report not only has the clear comparative description of the performance of different models, but also gives the corresponding reasons and explanations for some specific performance. For example, it gives the explanation for the specific impact on the use of Xavier when the learning rate is too small.

Weaknesses:

When explaining the effect of Xavier on the convergence process, this report can add some images of the model's convergence process to interpret "more difficult and slower", which is more intuitive.

Clarity and writing:

The only thing that I think should be improved is the report writing format, which can be changed to be more standardized in accordance with the standards given by the teacher.

Technical quality:

The whole report not only perfectly replicates the framework of the original paper and tries different hyperparameter of testing robustness, but also visualizes its detailed performance of its portfolio construction. What’s more, this report compares its results of loss, accuracy with the original paper, which not only shows the paper is replicable, but also proves the correctness of the technical process.