

AIML 425 Assignment 4

James Thompson
Victoria University of Wellington
300680096

I. INTRODUCTION
II. THEORY
III. EXPERIMENTS
IV. CONCLUSION

STATEMENT

The code and report of the Assignment was solely completed by myself (Thompson James). The complete source code can be found here https://gitea.james-server.duckdns.org/james/AIML425_assignment_4, with a link to a colab notebook found here: https://colab.research.google.com/github/1jamesthompson1/AIML425_assignment_4/blob/main/main.ipynb. A complete run through of the notebook takes about 10 minutes on a GPU enabled machine.

I have kept the appendix as concise as possible, however the code is setup to produce many more figures and tables that can be used to understand the models. Most of these figures have been generated and stored in the 'figures' folder.

I completed my work using the following tools:

- **Jupyter Notebook [1] and JupyterText [2]:** For interactive development and hosting.
- **LaTeX:** For writing the report.
- **VSCode [3]:** As IDE, with Copilot to help with plotting and debugging.
- **JAX [4] and Flax [5]:** For implementing the neural network and training logic.
- **Matplotlib [6] and Pandas [7]:** For data visualization and management.

REFERENCES

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- [7] The pandas development team, "Pandas-dev/pandas: Pandas."