SE4050 – Deep Learning Project Report

(Template generated 2025-10-07)

Title: Brain Tumor MRI Classification (4 Classes)

Authors / Group Members: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Introduction

Describe the problem, motivation, and scope. Why automate brain tumor classification?

2. Background

Summarize CNN, RNN, LSTM, and GNN basics and why each might help.

3. Dataset Description & Analysis

Source, classes, counts, sample images, any imbalance.

4. Preprocessing & Augmentation

Grayscale, 64x64 resize, normalization; any augmentations.

5. Models & Training Setup

CNN architecture; RNN sequence view; LSTM; GNN graph construction; hyperparameters.

6. Results

Accuracy, F1, confusion matrices, learning curves for each model.

7. Discussion

Compare models; explain why CNN likely wins; note any limitations; future work.

8. Conclusion

Wrap up key findings and impact.

References

[1] Dataset source (Kaggle). [2] Any papers/resources used.