University of Tehran

Homework 1: Project Report

Trusted Artificial Intelligence

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Abstract

A concise abstract (max 200 words) summarising objectives, methods, and main results. Replace this with a short summary of your experiments and findings.

Contents

1 Introduction

State the problem, datasets used, and the goal of the assignment. Keep this brief and focused.

2 Methods

Describe model architectures, training procedure, hyperparameters, data preprocessing and augmentations. Use subsections for clarity.

2.1 Model

Describe network architecture (e.g., ResNet18 — custom implementation).

2.2 Training setup

Optimizer, learning rate, batch size, number of epochs, and any regularizers.

3 Experiments

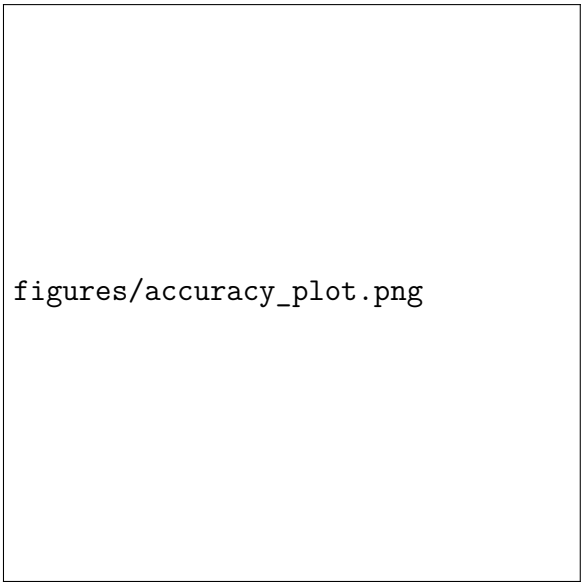
Explain datasets and experimental protocol (train/test splits, metrics).

3.1 Evaluation metrics

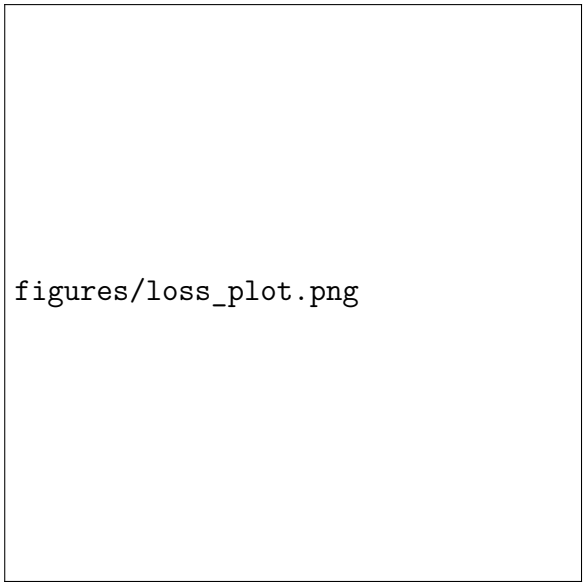
Accuracy, loss, robustness metrics, or others you used.

4 Results

Present quantitative and qualitative results. Include plots exported from your notebooks.



(a) Train / validation accuracy



(b) Train / validation loss

Figure 1: Example training curves — export plots from your notebook into the 'figures/' folder.

Table 1: Summary of main results

Model	Test accuracy (SVHN)	Test accuracy (MNIST)
Baseline ResNet18	0.00	0.00
+Augmentations	0.00	0.00
Pretrained Feat. Extractor	0.00	0.00

5 Discussion

Interpret the results, strengths/weaknesses, and propose next steps.

6 Conclusion

One-paragraph takeaway summary of what you did and the main findings.

Acknowledgements

(Optional) Acknowledge help, datasets or libraries used.

A Hyperparameters and Implementation Details

Provide tables or bullet lists with full hyperparameter settings.

B Selected Code

Include important snippets or point to code files. Example: full training loop excerpt.

Listing 1: Training loop (example)

```
for epoch in range(epochs):
    model.train()
    for x,y in train_loader:
        # training step
        pass
```

C Additional Figures

Any extra plots, UMAP visualizations, or adversarial examples can be included here.