

Title page

- Studio session no
- Group no
- Theme no
- Name and Students Number of Group members

1 Introduction

1.1 Background and Motivation

Discuss your motivations and reasons for choosing this project, especially any background or research interests that may have influenced your decision. Who will use, or be interested in, this AI model (i.e., users)? What kind of tasks will they want to do?

1.2 Project Objectives

Provide the primary questions you are trying to answer with your project. What would you like to learn and accomplish? List the benefits to you and the users of the completed AI model specially in Engineering disciplines.

1.3 Summary of Outcomes

Provide a brief summary of your outcomes in terms of overall performance of your final AI models.

2 Dataset

2.1 Data Source

Provide a description of your dataset. If this is from provided dataset still you need to provide your own summary of understanding of this dataset.

2.2 Data Processing

If you have conducted data cleanup/pre-processing/labelling then provide the step by step detail of this process with examples and plots including any exploratory data analysis

3 AI model development

3.1 Feature engineering/Feature extraction/Image processing

Describe the process if you have done any feature engineering in your project (i.e., if you have computed new features from raw data what are they, how you computed them). Describe any process of normalisation, data resampling you have done in this section. For Deep learning task, if you have done any image pre-processing (i.e., you segmented large image into smaller images or you have done background separation) the describe this in this section.

3.2 Train/Test split

How you have separated your train set, validation set and test set. Justify the reason of such split.

3.3 Training model

How you have trained your AI model. Describe here if you have done any hyper parameter tuning, iterative development, model and python library selection. If you have

trained multiple AI models to compare then provide a tabular/graphical representation of your model comparison and selection of final model

3.4 Evaluation of AI model

Describe the evaluation outcomes of your AI model. You should measure at least two evaluation criteria to compare and final selection of your model (e.g., F1 score and accuracy for ML model) or (mAP and IoU for deep learning model)

4 AI demonstrator

Describe the AI demonstrator of your model. How it is developed, what input is required, what outcome it produces including any suitable screenshots.

5 Conclusions

Provide a summary of final outcome, any technical or other challenges you have faced and how you overcome it. Provide a brief summary of what you have learnt after doing this.

6 References

References used (books, blogs, academic papers, forums, chatgpt prompts)

7 Appendix A

- Source code/notebooks of your project in a sharable link (google drive/one drive/github repo)
- Any intermediate data files you have produced in a shareable link (e.g., pre-processed data, labelled data with annotations, features)
- A 1 page document/short video that describes how to run your AI demonstrator with some sample inputs.