# A 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, especially in Engineering disciplines.

## *1.3 Summary of Outcomes*

Briefly summarise your outcomes regarding the overall performance of your final AI models.

# 2 *Dataset*

## *2.1 Data Source*

Describe your dataset. If this is from the provided dataset, you need to provide your own understanding of this dataset.

## *2.2 Data Processing*

If you have conducted data cleanup/pre-processing/labelling, 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, and how did you compute them). Describe any normalisation process data resampling you have done in this section. For the Deep learning task, describe in this section if you have done any image pre-processing (i.e., you segmented large images into smaller images or done background separation).

## *3.2 Train/Test split*

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

## *3.3 Training model*

How have you trained your AI model? Describe here if you have done hyperparameter tuning, iterative development, model and Python library selection. If you have trained multiple AI models to compare, provide a tabular/graphical representation of your model comparison and selection of the 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, and what outcome it produces, including suitable screenshots.

## 5 Conclusions

Please summarise the final outcome, any technical or other challenges you have faced, and how you overcame them. 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/drive/GitHub repo)
- Any intermediate data files and final model file you have produced in a shareable link (e.g., pre-processed data, labelled data with annotations, features, your final model file that you used in the demonstrator)
- A 1-page document/short video that describes how to run your AI demonstrator with some sample inputs.
- If your AI demonstrator is hosted online, also provide the public link ID.