

# COMP6721 Applied Artificial Intelligence

Summer 2023  
Project

## Project Frequently Asked Questions (FAQ)

- 1) Limitation of 15 features for the image or textual data  
The limitation of at least 15 features is applied when you have a tabular dataset. In this case, your dataset should have at least 15 features of different types (both categorical and numerical). If you plan to work on images, text, or video, this limitation is not applicable because any pixel of the image or any word in the corpus can be considered a feature.
- 2) Should only one model or all three models mentioned in the description be implemented?  
You should build all these three models: supervised decision tree, semi-supervised decision tree which is the same as supervised with few additional iterative steps, and deep learning.
- 3) Features for decision tree models with images and text  
For training a decision tree with the image or textual data, you could select your features, so it depends on your dataset and your creativity. You may use pixels as features (similar to handwritten digits classification), a combination of pixels, or decide to build your own features. For example, for image data, you may use the overall color or brightness of the image as features.
- 4) Using pretrained models (such as ImageNet, ResNet)  
The objective of the project is to build your deep learning model from scratch, so pretrained models are not acceptable at this phase. However, after building your model and for the sake of comparison, you could download a pretrained model and pass your data and compare the performance. Bonus points could be considered for such additional steps.
- 5) Will there be any bonus for working on images or text versus tabular data?  
When the dataset is composed of less structured or unstructured data such as text and images, more preparation work and more complex models are required. Therefore, the evaluation will be less strict on other aspects to compensate for this complexity. With a more “straightforward” dataset, the expectation to address all the details is naturally higher, so the evaluation will proportionally be more strict.
- 6) Do 20k observations include test, training, and test portions?  
Yes, you leave aside 20% for the test step, so with at least 20k, you will use at least 14k samples for the train and validation phases while leaving 4k for the test.
- 7) May we use that specific, usually known, dataset?  
It depends on the application that you have in mind. It is expected that you have an academic, engineering, commercial, or scientific application for your project, so you are able to provide motivation, challenges, and background information in your report.