# **Weekly Report 4: Image Classification and Identification**

**Team Members:**

Noshin Nawar– 2221507042

Md. Arebi Sarker– 2221362042

Mubashshira Kaisar– 2221070642

Md Zidan Khan– 2231413642

**Group Number**: 01

**Date:** 9 July, 2025

This week, we made significant progress on our Image Classification and Identification project. Our key accomplishments include:

We successfully developed two binary image classification models using convolutional neural networks (CNNs). The first model classifies images from the Kaggle Cat vs Dog dataset, accurately distinguishing between cats and dogs by leveraging a balanced dataset with standard preprocessing steps such as resizing and normalization. The second model focuses on distinguishing cars from non-car images (trees) using a custom dataset. Both models were implemented in Python with TensorFlow and Keras, and trained using an 80-20 train-test split. We applied dropout layers and optimized with the Adam optimizer to reduce overfitting and improve accuracy. Preliminary results show promising accuracy, demonstrating effective feature learning for simple object recognition tasks. These projects establish a solid foundation for future enhancements, such as data augmentation and deployment.

Overall, the project is shaping up well, with core modules functional and gradually being consolidated under one command-line interface.