**Applied Machine Learning**

**Spring 2025**

**Group Assignment # 3**

**Max Marks: 100 Due Date: April 7, 2025**

**Q1.** Implement ANN based solution for the detection and classification of Solar Panel Faults including (Electrical damage, physical damage, damage due to fire, dusty panels, bird-droppings, snow, etc., Then, generate your own data and test the trained system. Submit complete running code and documentation for a CCTV-Camera-based solution with notifications and reminders.

Resources/starting point: <https://www.kaggle.com/code/pythonafroz/dust-detection-on-solar-panel-using-inceptionv3> **(50 marks)**

**Q2.** A root canal removes infected pulp from the tooth's interior, while a filling addresses minor cavities by filling the decayed area. Root canals are needed for severe decay or infection reaching the pulp, while fillings are used for minor decay.Implement ANN based solution for the classification of Root Canal verses Filling cases. Try to acquire some local dataset (x-rays) and test your system.

Resources/starting point: <https://universe.roboflow.com/md-farhan-hasin-saad/root-canal/browse?queryText=&pageSize=50&startingIndex=0&browseQuery=true> **(50 marks)**