Seminar Abstract

Topic : Waste Classification and Segregation using Machine Learning

Machine learning (ML) is a subfield of artificial intelligence (AI) that uses algorithms to analyze and identify patterns in data. It can be used for waste classification and segregation to automate the process of identifying different types of waste and separating them into distinct categories. This can be done through various ML techniques, such as image recognition and classification, which can help to identify objects in waste images and assign them to appropriate categories.

For example, a convolutional neural network (CNN) can be trained on a dataset of waste images, where each image is labeled with the type of waste it represents (e.g. paper, plastic, metal, glass). The CNN will then learn to recognize the features of each type of waste, and use this knowledge to classify new images into the appropriate categories. This can help to improve the accuracy and efficiency of waste segregation, reducing the need for manual labor and reducing the risk of human error.

Machine learning can be used to classify and segregate waste in a number of ways. One approach is to use computer vision techniques, such as image recognition or object detection, to identify different types of waste in images or videos. These algorithms can be trained on large datasets of waste images and can automatically classify new images into different waste categories, such as paper, plastic, glass, and metal.

Another approach is to use natural language processing techniques to process text descriptions of waste and automatically classify them based on their content. For example, a machine learning model can be trained on a dataset of text descriptions of waste items and their corresponding categories, and then be used to classify new waste items based on their descriptions.

In both cases, the goal of using machine learning for waste classification and segregation is to automate and streamline the process, making it more efficient, accurate, and cost-effective.