

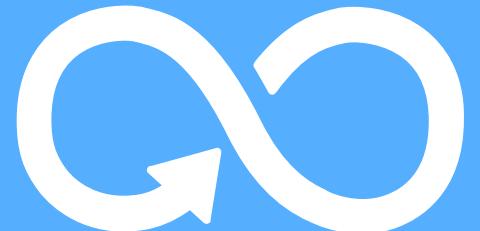


SMART AI TRASH BIN

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12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



PROJECT GOAL

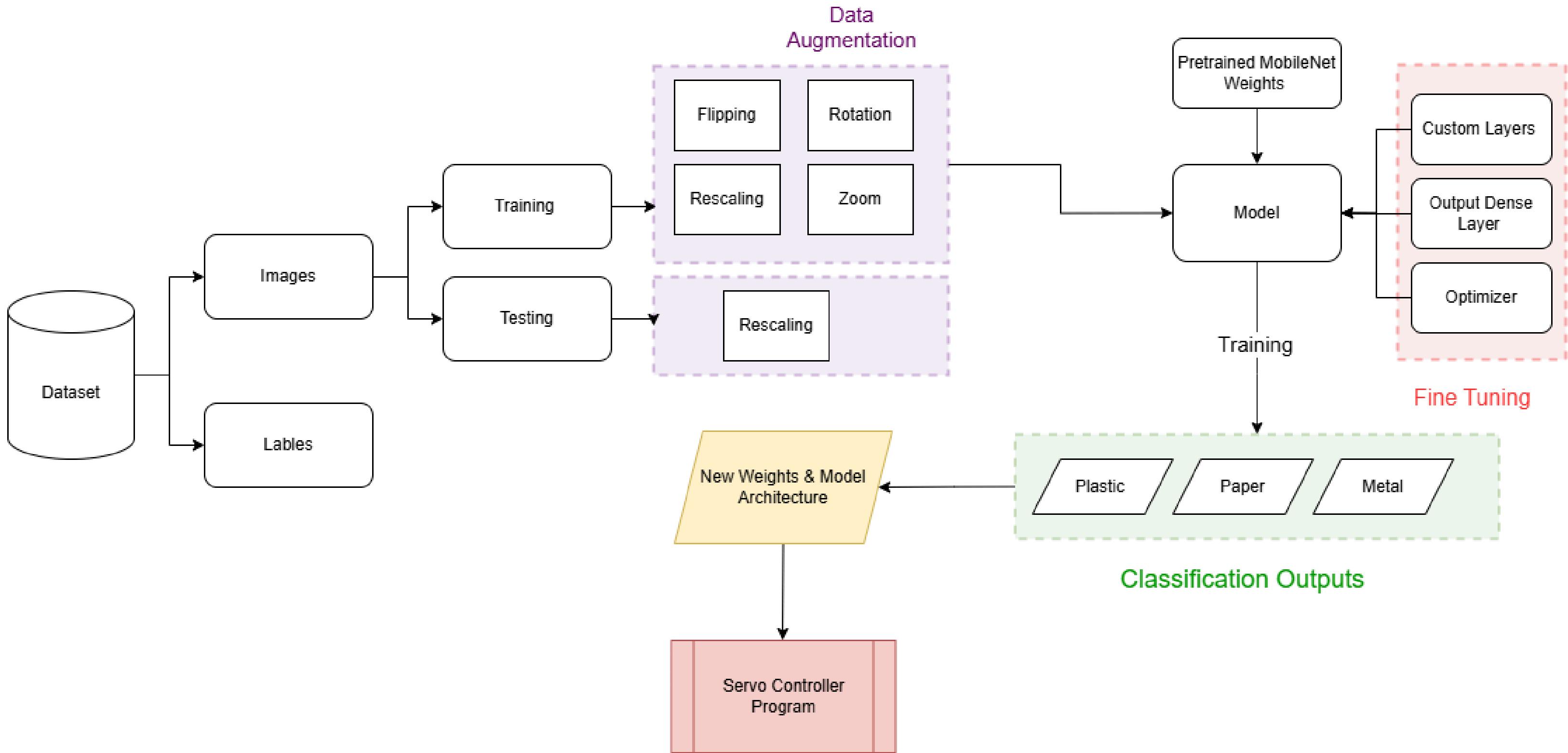
With the growing need for efficient waste management and recycling, separating waste materials at the source has become a crucial step.

The Smart AI Trash Bin is an innovative solution that leverages artificial intelligence to automate waste segregation, promoting efficient recycling and sustainable waste management.

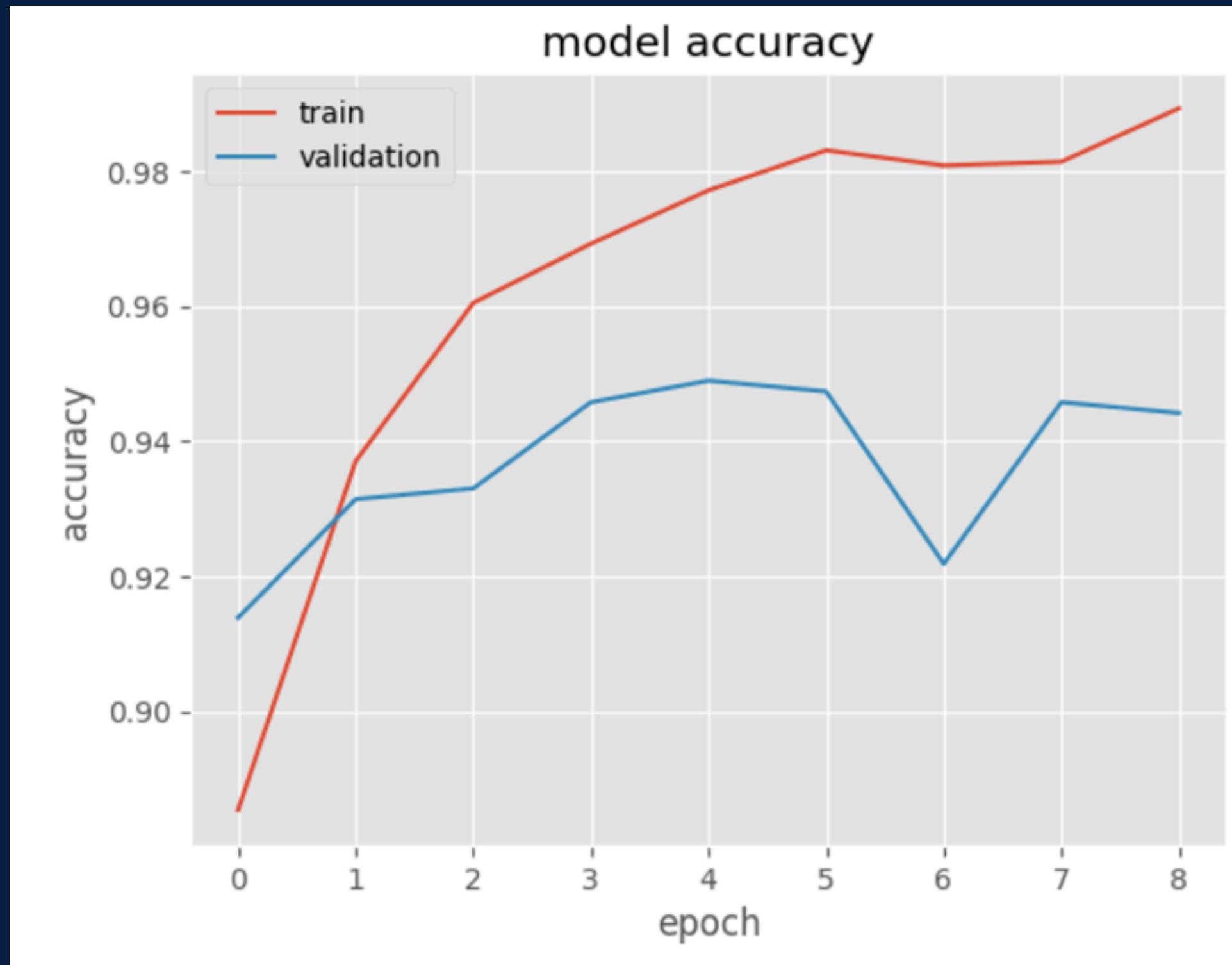
11 SUSTAINABLE CITIES AND COMMUNITIES



MODULAR STRUCTURE



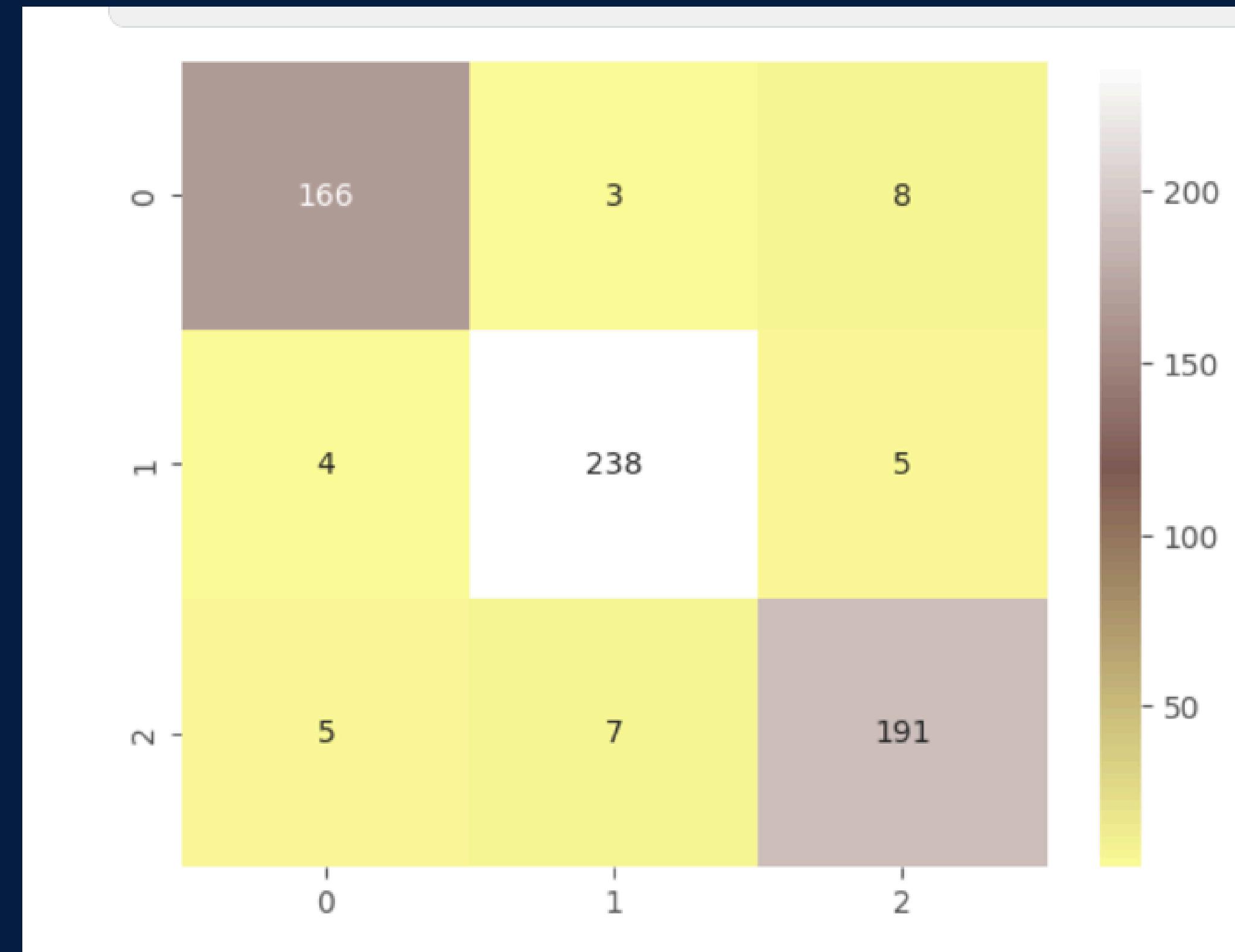
RESULTS & OUTPUTS - ACCURACY



98.5% Training Accuracy

95% Testing Accuracy

RESULTS & OUTPUTS - CONFUSION MATRIX



RESULTS & OUTPUTS - TEST IMAGES

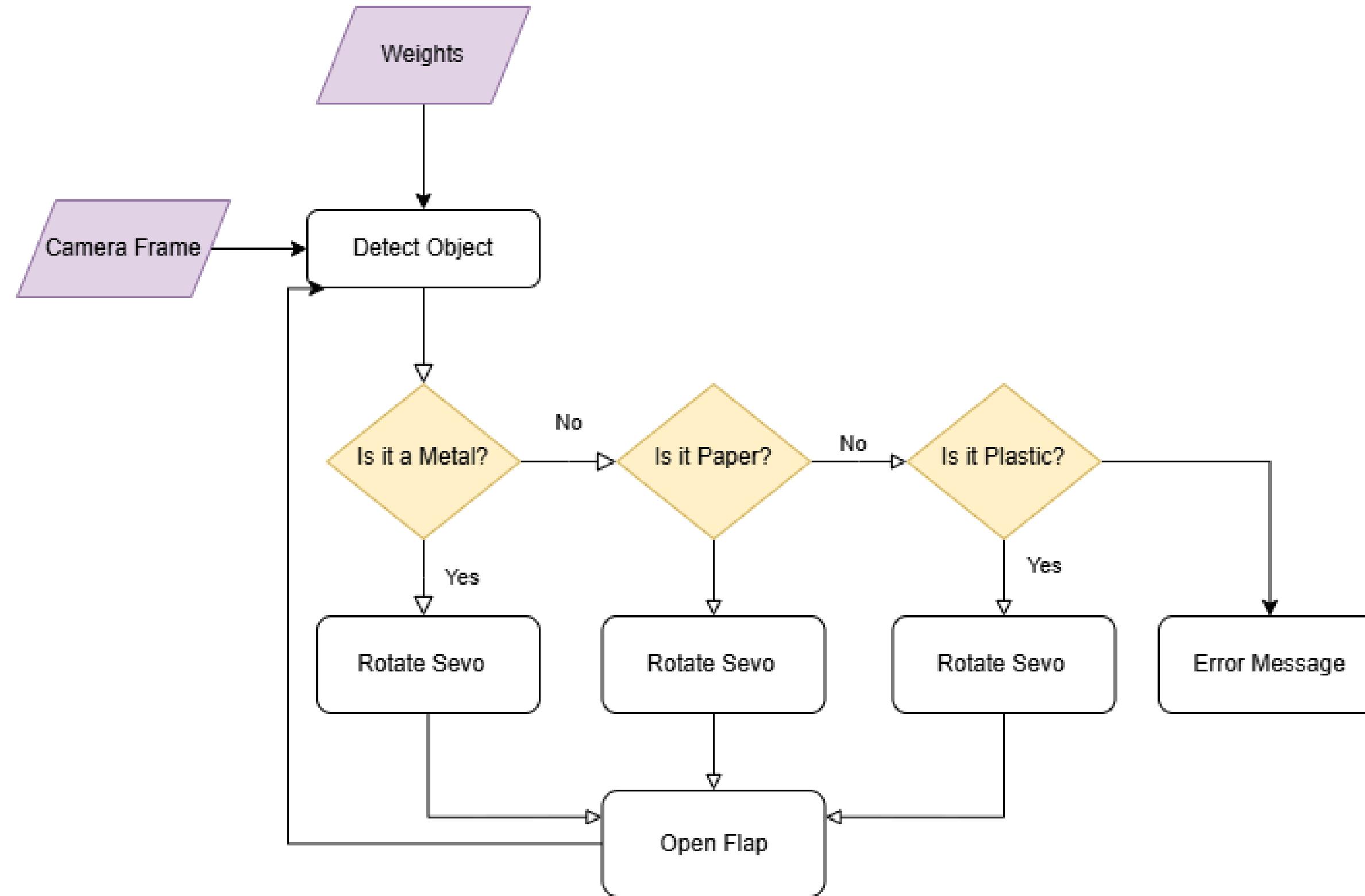


PROJECT DESCRIPTION

The project comprises a small compartment mounted on a stand where users can deposit their trash.

- A camera is positioned above the compartment to capture images of the trash. A pre-trained AI model classifies the trash as plastic, metal, or paper based on the captured image.
- Based on the classification, a servo motor-controlled arm rotates to position itself above the appropriate bin.
- A flap mechanism, also controlled by a servo, opens beneath the compartment, allowing the trash to slide down into the selected bin.

MODULAR STRUCTURE



CIRCUIT SCHEMATIC

