RISK RESPONSE PLAN

Copy-Waste

#	Risk	Risk Response	Description	Contingency Plan
1	Simple Copy-Paste Methods Fails to maintain adequate object detection rates	Avoid	Avoid this risk by thoroughly researching the copy-paste method and ensuring it is implemented correctly.	If the method continues to fail to provide adequate results, the following concerns should be addressed: If the method fails as a result of image annotations, further images can be collected with improved annotations to provide the model with a better understanding of the object. If the method fails due to poor implementation, further research can be utilized to assess the area of concern within the code but to also embed tests to avoid this risk in the future.
2	Universal Bin Detector does not show improvement in detecting false positives	Mitigate	Mitigate this risk by testing the model extensively on data collected from the recycling trucks to identify which categories the model is struggling with	If further improvement is required, additional images can be collected and annotated to increase datasets for categories being detected in order to train the object detection model within YOLO. Alternatively, if poor results continue, a different object detection algorithm should be employed, such as MASK R-CNN.
3	Universal Bin Detector has slow/poor performance on the edge computer	Mitigate	Mitigate this risk by increasing the computational capabilities of the waste truck's computer.	In the case of slow/poor performance, the use of a Tensor Processing Unit (TPU) can be explored in order to add computational power to the waste truck's edge computer.

4	Receiving Ground-Truth data from waste management company	Mitigate	Mitigating this risk by using occurrences of objects such as yard waste which we already have real-world images within our current datasets to test our model.	If this continues to become an issue for future objects which need to be detected, a recycling truck can be potentially borrowed from the waste management company, allowing us to collect images in a real-world environment for testing.