Implementation Algorithms

These are the representations of the algorithms that have been implemented for this project:

YOLOv5 Algorithm for Overall Object Detection:

Overview of YOLOv5 **PANet** Output BackBone BottleNeckCSP Concat BottleNeckCSP Conv1x1 Conv3x3 S2 UpSample Conv1x1 Concat BottleNeckCSP BottleNeckCSP BottleNeckCSP Conv1x1 Concat Conv3x3 S2 UpSample Conv1x1 Concat BottleNeckCSP BottleNeckCSP SPP Conv1x1

DeepSORT Algorithm for Danger Zone Detection:

image Detector detections sequence appearance Deep Appearance cost & gate Descriptor features Matching tracks feature bank) Cascade gate tracks tracks (predicted) (updated)

DeepSORT: SORT with a Deep Association Metric

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Centroid and Euclidean Distance for Fire Hazard Detection:

