# Acme Robotics Human Detector-Tracker

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| <ul><li>Human detection and tracking is very renown problem as it is important part of many practical applications.</li><li>With the advent of deep learning, it is more robust and easier to model a human detect-track system which can be used in an obstacle avoidance module for many autonomy-based products.</li></ul> | <ul><li>Our proposed design uses YOLOv4-tiny architecture which applies entire neural network on a single image.</li><li>In general, YOLO divides entire image into regions and the neural network predicts bounding boxes and probability for the same. This reflects in how confidence is the network that a bounding box contains an object.</li><li>Once, we know where the object in an image is, we intend to return its location according to world frame.</li></ul> |
| <ul><li>The specific selection of YOLOv4-tiny was because it is compressed version of YOLOv4 and hence more feasible for deploying, faster training and faster detection.</li><li>We provide three modes that is training, testing and run-real time.</li><li>Our proposed design uses auto-calibration mode to estimate real world coordinates of human in robot reference frame.</li><li>Also, it can be easily generalized from human to any detection system.</li></ul> | <ul><li>Human detector and tracker with location in robot reference frame.</li><li>Overview of proposed work, risks and mitigation, product backlog.</li><li>UML diagram, Activity diagram</li><li>Github repository with unit tests and stubs</li><li>Developer level documentation</li></ul> |