Overview

Design and Implementation of preception module of human detector and tracker for ACME Robotics.

Image acquisition will be done using a monocular video camera feed for human detection and tracking.

Depth estimation will be done, which would ultimately calculate the human poses and notify the robot about the current position of the humans.

Software Development Practices

Software Process	: Agile Iterative Process (AIP)
Software Implementation	: Test-Driven Development (TDD)
Programming Language	: C++ 14
Unit Testing	: Google Test Framework
Code review	: Google C++ Style Guide, cpplint, cppcheck
Code Coverage and Testing	: CodeCov, GibHubCI

Deliverables

Project Outputs: Human detection and tracking package for a moving

Pretrained model with the implementation of tracking algorithm and pose extraction

Software integration, Usage and Implementation documentation for ACME Robtoics with video proposal

Expected deadline: 4 weeks (After the proposal)

Software Implementation Plan

Preprocessing of the input dataset

Training of the YOLO detection model

Object(Human) detection using YOLO pretrained model

Tracking of the detected objects(humans)

Depth Estimation and pose extraction of the humans