Jon Rippe PDAQS Progress Report 21.11.0

Issues Addressed

- Video Object Detection Speed
 - o Changed default from 512x512 to 256x256 (much faster)
- Code Documentation
 - o High level code documented
- Various Refactoring (non-exhaustive)
 - o Moved point transform function to Camera class
 - o Improved Camera buffer filling workflow
 - o Increased video detection model modularity
 - o Consolidated global configuration (no more passing params around)
 - o Split config into 2 JSON files: config.json & cameras.json
- Alignment Tool Functionality
 - o Can now be used to tune timing offsets
 - o Added Save button to save directly to JSON file
- Distortion Tool
 - o Created calibration device (chessboard on plywood)
 - o Created distortion calibration tool (rudimentary)

New Code

Model class - Abstract class. Parent class to video object detection model classes.

TrafficDetector class - Changed to wrapper class for Models.

tools/utils.py - Includes saving and loading logic for global JSON configuration files.

tools/video/distortion tool.py - Distortion calibration tool.