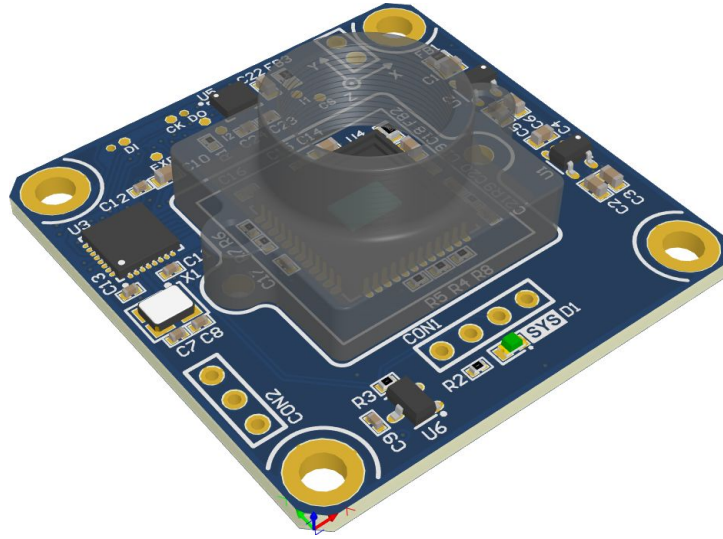


# Development and Implementation of an Open Source Monocular Machine Vision Sensor

## Master Thesis/Project Proposal in Automatic Control



One of the fast growing areas for robot localization, and allowing robots to perceive their environment, is Machine Vision - but the area of machine vision sensors is very proprietary. We aim to make the area of machine vision easier to adopt by creating one of the first fully Open Source monocular machine vision sensors!

- The main aim is twofold:
  - One student for creating the camera board, which will house the image sensor and the Inertial Measurement Unit.
  - One student for creating the processing board, it will consist of an FPGA with support components.
  - (optional, can be done by one of the previous students) One student for implementing the VHDL code for communicating with the camera.
- The project is fully Open Source, you will be added as contributors.
- Knowledge in VHDL and digital electronics is recommended, but most important is wanting to learn.
- Knowledge in high speed design is a plus.
- Knowledge in image processing is a plus.

You will be in tight discussion with a supervisor for guiding your development and learning.

Proposal from Emil Fresk and George Nikolakopoulos, Control Engineering Group, SRT

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