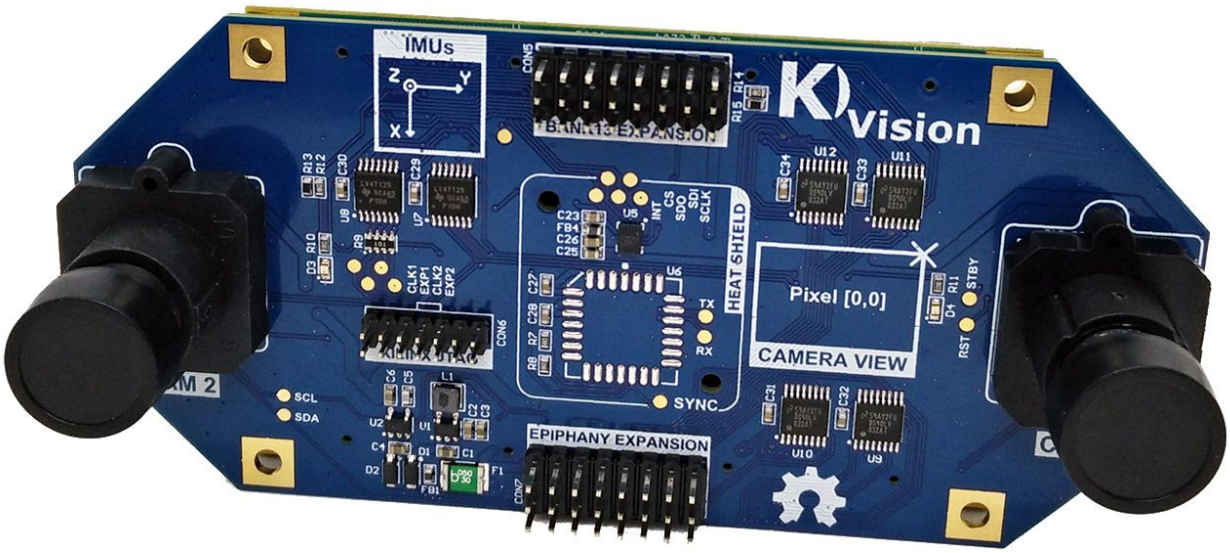
# Implementation and Evaluation of an Open Source Stereo Camera

## 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 (cameras / stereo cameras) is very proprietary. We aim to make the area of machine vision easier to adopt by creating one of the first fully Open Source stereo cameras!

- The main aim is to implement and evaluate the hardware in an FPGA to read and configure the cameras.
    - Two cameras talking I2C and LVDS to an FPGA (Xilinx Zynq 7020).
    - One Inertial Measurement Unit connected via SPI to the FPGA (does not need to be implemented, but is a plus).
- The project is fully Open Source (hardware and software), you will be added as contributors.
- Knowledge in VHDL and digital electronics is recommended, but most important is wanting to learn.
- Knowledge in image processing is a plus, but not needed. The project needs a good end demonstration, ex. extract image features, do some simple image processing, etc.
- 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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