TrustEYE

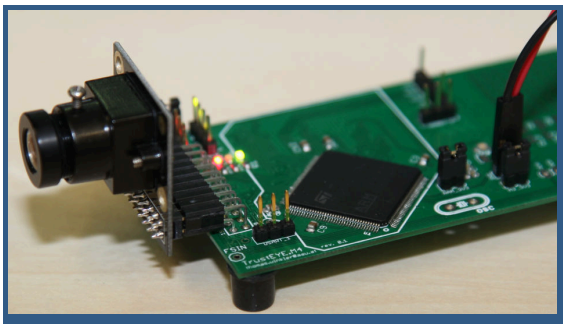
Trustworthy Sensing and Cooperation in Visual Sensor Networks

The Pervasive Computing Group is looking for a student from the field of Information Technology or Computer Science for a **research project** or a **Bachelor / Master thesis** entitled:

Embedded Computer Vision on an ARM-based Microcontroller Systems

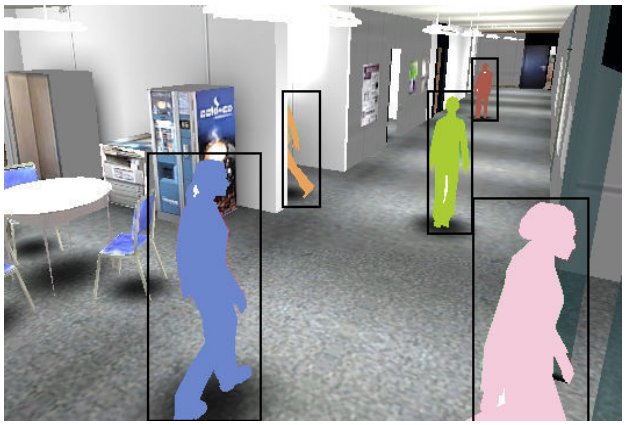
This work will be performed as part of the TrustEYE research project. Background information about the TrustEYE project and its goals can be found at http://trusteye.aau.at

Work Description



Prototype of an ARM-based visual sensor node.

Computer vision on resource limited microcontroller (uC) systems is a challenging task. In this project an extended research on existing computer vision techniques designed for low-performance systems should be conducted. Of special interest are **foreground/background** segmentation, object **detection** and **classification** as well as **tracking** techniques. Existing approaches should be classified based on the required computing and memory resources. A selected set of algorithms will be implemented and evaluated on an ARM Cortex M4 microcontroller. An important aspect of the implementation will be the optimization for the **DSP** and **SIMD** parallel function units of the M4 microcontroller.



Required Skills:

- C/C++

Desired Skills:

- Basic experience with microcontrollers
- Basic experience with computer vision
- Linux (host system)

ALPEN-ADRIA UNIVERSITÄT
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Contact:

Thomas Winkler
Institute of Networked and Embedded Systems
Alpen-Adria-Universitaet Klagenfurt, Austria
P: +43 463-2700-3672
E: thomas.winkler@aau.at
W: http://trusteye.aau.at

Partners & Sponsors:

NUS National University of Singapore

KWF Kärntner Wirtschaftsförderungs Fonds

FWF Der Wissenschaftsfonds.

Investition in Ihre Zukunft
EFRE Europäischer Fonds für regionale Entwicklung
kofinanziert von der Europäischen Union