Traineeship / Graduate project  (July 2014)

Title

Maritime video-object segmentation.

Description

Siqura B.V. is located in Gouda and provides advanced video surveillance solutions to world. These solutions include IP cameras, video encoders, network video recorders, fiber equipment, video management and video analysis software. In the upcoming years, Siqura will focus more and more on the maritime market. Video-content analysis will have an important role in the market position of Siqura in this market. Siqura currently sells a video-based perimeter intrusion detection algorithm for land-based surveillance, which is based on background segmentation. However, due to the non-static nature of the water in maritime surveillance, these situations require more advanced processing techniques. First, you will make a literature survey of techniques and recommend us on the algorithms with the highest potential to solve the segmentation problem. In the second phase, you will be required to implement one or more promising techniques and evaluate the performance for perimeter intrusion detection.

The literature survey can be done separately in a traineeship of 3 months.

Goals

- High-performance background segmentation algorithm for maritime scenarios
- Implementation on embedded processor (ARM/DSP) [optional]

Tasks

- Literature survey of segmentation methods
- Algorithm design and evaluation
- Estimation of the computational complexity
- Recording of additional test sequences if required
- Writing a report/paper on the algorithm

Keywords and -technologies

- C++ or python, Linux, SIMD/VLIW optimization
- Fluent Dutch or English speaker and writer
- Experience with image processing and computer vision through work and/or university courses

Contact information

You are invited to send your CV to Anne van Vossen (a.vanvossen@tkhsecurity.com) and Julien Vijverberg (j.vijverberg@tkhsecurity.com).