

# Master-IT: Project Work WS 2010 / 2011

## Topic:

## Control concept for mobile devices using built-in cameras

### Area: Industrial Image Processing

- Start: September 2010
- Partner: Industry Project
  
- Tool: Matlab/Simulink, netbeans
- Prerequisites: Programming know-how in Matlab's m-language and Java

### Description:

The project-goal is the development of new control concepts for mobile platforms. Many mobile devices, like laptops, Tablet PCs and mobile phones nowadays have cameras built-in which could be used for applications like motion-, head and eye-tracking. Especially the cameras that are oriented towards the user, which are normally used for videoconferencing, seem fit to be used as tracking devices. The first part of the project consists of a survey of available (state of the art) head- and eye-tracking methods, followed by a closer look at the methods that are best fitting for usage on mobile devices. This theoretic overview is followed by the formulation of a few use cases for head/eye-tracking for mobile devices. It is not the goal to develop a complete new user interface, but only some use cases for demonstration purposes. Examples for these use cases are:

- Browsing assisted by eye-tracking:
  - auto-scrolling when the eyes look at the border of the screen
  - auto-zoom when eyes stare at one specific region
- Auto-stop function for video players: if the user looks away from the display, videos stop automatically (this application is not restricted to mobile devices, as it could be used for television)

Many mobile devices also have accelerometers, which could be used to support tracking applications: If the device is moved the tracking application can be adapted accordingly to the movement. Overall this project should work out how tracking applications could work with mobile platforms.

### Contact:

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