

# Offer for an Internship for Master Students

The offer is for Master Students with the option for a final thesis

## Topic:

### **Development of a real-time feature point detection and matching algorithm for embedded platforms**

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Electronic Imaging department in Erlangen

## Abstract:

With increasing number of 3D-TV productions the need for dedicated algorithms for camera calibration and scene analysis increases. One of the main problems in multi-frame image processing is to establish point wise correspondences between different camera frames. This task can be very time consuming, so it is a challenge to implement such an algorithm for an embedded system with limited capabilities such as the small broadcast camera developed at Fraunhofer IIS.

## Tasks:

Do an evaluation of existing feature point detection and matching algorithms regarding speed, stability and scalability. Adapt the most promising approaches for the given camera platform, or develop a new algorithm capable of real-time feature point detection and matching. The programming framework is Android operating system with Android SDK and NDK. Hardware platform is Omap4 from Texas Instruments. Additional hardware capabilities like the build-in DSP can also be utilized.

## Requirements:

Experience in the area of image processing algorithms (desirable)  
Experience with C/C++ programming language (essential)  
Experience with Java programming language (desirable)  
Experience in working with Android SDK and NDK (desirable)

## Payment Conditions & Application:

Fraunhofer IIS will pay an appropriate allowance to cover living costs and will also provide for accommodation and medical insurance during your stay in Erlangen. Travel expenses will not be reimbursed.

If you are interested in the afore-mentioned topic please send your formal application including CV, motivation letter, latest grades report, and the date of your earliest possible start to:

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**About the Fraunhofer IIS department “Electronic Imaging”:**

The Electronic Imaging department designs customer-specific camera systems for industrial and medical imaging applications as well as for the film and broadcast markets. Our areas of expertise cover the entire signal chain, starting with the image sensor, to the design of custom-tailored image processing algorithms, the development of signal processing hardware and software, and finally, software for intelligent image analysis.

For further information please visit our website: [www.iis.fraunhofer.de](http://www.iis.fraunhofer.de)