Offer for a 3-Months Internship for Bachelor Students

The offer is for Bachelor Students with the option to continue for a final thesis

Topic:
Definition and implementation of a communication protocol for a multi-camera setup

Supervisor: M. Sc. Anton Papst
               Electronic Imaging department in Erlangen

Abstract:

The Electronic Imaging department at Fraunhofer IIS is developing point-of-view cameras for broadcasting services. When connecting such cameras into a multi camera array for 3D-TV production, there is a need for real-time inter-camera communication in order to perform real time image processing tasks simultaneously on each participating camera and to evaluate the extracted information.

Tasks:
Do an analysis on communication ways available on the camera platform. Do an evaluation on what kind of data has to be passed between the single cameras in order to perform specific image processing tasks e.g. extrinsic camera calibration. Design and implement a media independent communication protocol capable of enabling communication between multiple devices. Do an evaluation of the implemented protocol regarding speed, stability and scalability. The programming framework is Android operating system with Android SDK and NDK.

Requirements:
Knowledge in the area of TCP/IP based communication protocols (essential)
Experience with Java programming language (desirable)
Experience in working with Android SDK (desirable)

This thesis is offered for bachelor students with the option to continue for a master's thesis e.g. design and implementation of a synchronization protocol for a distributed camera system as well as conceptual design and implementation of an approach for the interchange and processing of camera parameters for geometric and colorimetric system calibration.

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