The Third IEEE Workshop on Embedded Computer Vision

Saturday, June 23, 2007
Minneapolis, Minnesota, USA
http://monocacy.eng.umd.edu/ecv07/

in conjunction with IEEE CVPR 2007

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Program

8:45-9:00	**Organization / Announcements**
9:00-10:15	**Keynote** (Dr. Wayne Wolf, Princeton University)
10:15-10:30	**Break**
10:30-11:30	**Applications** (chair: Dr. Mainak Sen) Real-Time License Plate Recognition on an Embedded DSP-Platform, Clemens Arth, Florian Limberger, Horst Bischof PrivacyCam: a Privacy Preserving Camera Using uCLinux on the Blackfin DSP, Ankur Chattopadhyay, Terry Boult Real time planar surface segmentation in disparity space, Ninad Thakoor, Sungyong Jung, Jean Gao
11:30-12:30	**Architecture** (chair: Dr. Will Plishker) A Specialized Processor Suitable for AdaBoost-Based Detection with Haar-like Features, Masayuki Hiromoto, Kentaro Nakahara, Hiroki Sugano, Yukihiro Nakamura, Ryusuke Miyamoto OpenVL: Towards A Novel Software Architecture for Computer Vision, Changsong Shen, James Little, Sidney Fels Hardware implementation of an SAD based stereo vision algorithm, Kristian Ambrosch, Martin Humenberger, Wilfried Kubinger, Andreas Steininger
12:30-2:00	**Lunch**
2:00-3:00	**Invited Speaker** (Dr. Gregor Nixon, Altera Corporation)
3:00-3:10	**Break**
3:15-4:45	**Analysis** Multimodal Mean Adaptive Backgrounding for Embedded Real-Time Video Surveillance, Scott Wills, Linda Wills, Senyo Apewokin, Brian Valentine, Antonio Gentile Robust Local Features and their Application in Self-Calibration and Object Recognition on Embedded Systems, Clemens Arth, Christian Leistner, Horst Bischof A Human Action Recognition System for Embedded Computer Vision Application, Hongying Meng, Nick Pears, Chris Bailey Performance Benchmark of DSP and FPGA Implementations of Low-Level Vision Algorithms, Daniel Baumgartner, Peter Roessler, Wilfried Kubinger
4:45-5:00	**Best Paper Award / Announcements**

Speakers

Dr. Wayne Wolf, Princeton University

Two Topics in Embedded Computer Vision: Markets and Architectures

Abstract : This talk looks at the embedded computer vision field from two sides. We first consider some of the commercial applications of embedded computer vision based on the experience of Verificon Corporation. The challenges presented by real-world systems range from poor lighting to the expectations of customers. We will then move onto consider the relationship between algorithms and architectures in embedded computer vision. New generations of VLSI processors will provide huge computational capabilities at very low cost. However, algorithms must be properly adapted to make the best use of these embedded platforms. We will introduce some current and future system-on-chip platforms and consider what sorts of algorithms do and don't work well on these devices.

Dr. Gregor Nixon, Altera Corporation

Design methodologies for the implementation of DSP algorithms on FPGAs

Abstract: This talk will cover the design methodologies available for the implementation of DSP algorithms on Altera FPGAs. Software and Simulink based design entry, the subsequent synthesis to RTL, and the advantages of these approaches will be covered. Particular attention will be paid to how these methods can be used to implement DSP algorithms for video and image processing.