

FPL-Workshop on "Computer Vision on Low-Power Reconfigurable Architectures"

Date: **Sunday September 4, 2011**

Time: 13:00 – 18:00

Location: *to be announced*

Workshop Chair: *Dr. Markus Koester, University of Paderborn, Germany*

Preliminary Program

13:00 - 14:00

Invited Talk: Accelerating Machine Vision with FPGAs: Successes, Challenges, and Lessons Learned

Kevin M. Irick, Microsystems Design Laboratory, Pennsylvania State University, USA

14:00 - 14:30

Hardware-Accelerated Object Tracking

Tobias Becker, Qiang Liu, Wayne Luk, Georg Nebehay and Roman Pflugfelder

14:30 - 15:00

Single Low-Power FPGA Implementation of Moving Object Detection

Tomasz Kryjak, Mateusz Komorkiewicz and Marek Gorgon

15:00 - 16:00

Coffee Break and Posters/Demos

A Co-Design Methodology for Implementing Computer Vision Algorithms for Rover Navigation onto Reconfigurable Hardware

Marcos Avilés, Kostas Siozios, Dionysios Diamantopoulos, Lazaros Nalpantidis, Ioannis Kostavelis, Evangelos Boukas, Dimitrios Soudris and Antonios Gasteratos

A Low-Power Vision Processing Platform for Mobile Robots

René Griessl, Stefan Herbrechtsmeier, Mario Porrmann, Ulrich Rueckert

An FPGA-based Low-Power Object Detector with Dynamic Workload Balancing

Chuan Cheng and Christos-Savvas Bouganis

An FPGA-based Neural Network for Computer Vision Applications

Robin Pottathuparambil and Ron Sass

AX32 Low Power Embedded Video Enabled System Using FPGA

Pavel Zemík, Lukáš Maršík, Vít Široký, Otto Fučík, Pavol Korček and Jiří Šustek

Fast and Energy Efficient Image Processing Algorithms using FPGA

Pavel Zemčík, Bronislav Příbyl, Martin Žádník and Pavol Korček

GPU-Based Signal Processing Scheme for Bioinspired Optical Flow

Fermin Ayuso, Carlos García, Guillermo Botella, Manuel Prieto and Francisco Tirado

Intelligent Camera System based on the Spartan 6

Marek Gorgon and Artur Zawadzki

Mobile 3D Vision – Algorithm and Platform Challenges

Kyle Rupnow, Yun Liang, Dongbo Min, Minh Do and Deming Chen

Real-time Biofeedback of Muscle Contraction via Ultrasound Image Analysis on GPUs

P. J. Harding, N. Costen, A. Nisbet, I.Loram and J. Darby

16:00 - 17:00

Invited Talk: High Performance Energy Efficient Reconfigurable Accelerators for the Sub-45nm Era

Ram K. Krishnamurthy, High Performance & Low Voltage Circuits Research Group, Intel Labs, USA

17:00 - 17:30

A Hybrid Multi-Core Architecture for Real-Time Video Tracking

Markus Happe and Enno Lübbers

17:30 - 18:00

A Flexible Smart Camera System based on a Partially Reconfigurable Dynamic FPGA-SoC

Daniel Ziener, Stefan Wildermann, Andreas Oetken, Andreas Weichslgartner and Jürgen Teich

18:00

Closing Remarks