

Workshop on Parallel and Distributed Image Processing, Video Processing, and Multimedia (PDIVM'2003)

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In the recent years, computing with visual and multimedial data has emerged as a key technology in many areas. However, the creation, processing, and management of these data types require an enormous computational effort, often too high for single processor architectures. Therefore, this fact taken together with the inherent data parallelism in these data types makes image processing, video processing, and multimedia natural application areas for parallel and distributed computing.

The Workshop on Parallel and Distributed Image Processing, Video Processing, and Multimedia (PDIVM 2003) brings together practitioners and researchers working in all aspects of parallel and distributed computing in these fields. PDIVM 2003 is the fifth workshop in the PDIVM series (being held annually at IPDPS since 2000). The meeting serves as a forum for exchange of novel ideas on corresponding hardware developments, software tools, algorithms, system solutions, and all types of applications.

PDIVM'2003 aims to act as a platform for topics related, but not limited, to

- Parallel and distributed architectures and algorithms
- Dynamically reconfigurable architectures
- Parallel DSP systems and Media processors
- Application specific parallel architectures
- Languages, software environments and programming tools
- Parallel and distributed video and multimedia servers
- Networked multimedia systems, QoS techniques
- Applications, e.g. remote sensing, medical imaging, satellite image processing, set-top boxes, HDTV, mobile multimedia, cameras

Out of 17 submitted papers, 12 have been selected for presentation at this years workshop. Whereas the last PDIVM meetings had a significant amount of contributions from the distributed multimedia field, this year's program focuses more on classical parallel and distributed image processing and vision issues. Main themes are hardware, image processing libraries, and applications in the vision area. The latter topic is also covered by this years invited presentation given by Edwige Pissaloux from the University of Rouen on "Vision Processing and Dedicated Parallel Architectures".

List of Accepted Papers

An FPGA Implementation of a Flexible, Parallel Image Processing Architecture Suitable for Embedded Vision Systems (S. McBader, P. Lee)
Vectorization of the 2D Wavelet Lifting transform using SIMD extensions (C. Tenllado, D. Chaver, L. Pinuel, M. Prieto, F. Tirado)
Performance Evaluation of Two Emerging Media Processors: VIRAM and Imagine (S. Chatterji, M. Narayanan, J. Duell, L. Olier)
Lazy parallelization: a finite state machine based optimization approach for data parallel parallel image processing applications (F.J. Seinstra, D. Koelma)
Directives for SPMD image processing on Beowulf clusters (P. Oliveira, H. du Buf)
Multi-paradigm frameworks for parallel image processing (D. Johnston, M. Fleury, A. Downton)
Semi-structured portable library for multiprocessor servers (G. Tsilikas, M. Fleury)
Vision Processing and Dedicated Parallel Architectures [Invited Talk] (E. Pissaloux)
Parallel and distributed computing for an adaptive visual object retrieval system (T. Krueger, J. Wickel)
A Beowulf-class architecture proposal for real-time embedded vision (P.A. Revenga, J.L. Lazaro, J. Serot, J.P. Derutin)
High performance missing data detection and interpolation for video compression and restauration applications (M. Ceccarelli, A. Petrosino)
Gigapixel-size Real-time Interactive Image Processing with Parallel Computers (K.A. Perrine, D. R. Jones)
Performance Evaluation of Vision-based Real-time Motion Capture (N. Date, H. Yoshimoto, D. Arita, S. Yonemoto, R. Taniguchi)

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