

Forging a Close Relationship with Multimedia Communities

Wenjun Zeng

University of Missouri and Microsoft Research Asia

Zicheng Liu

Microsoft Research

Eckehard Steinbach

Technical University of Munich

IEEE *MultiMedia* magazine was founded in 1994 and was the first IEEE publication in the multimedia area. *MM* serves the community of scholars, developers, practitioners, and students who are interested in multiple media types, used harmoniously together, for creating new experiences.

In early 2014, the *MM* editorial board launched several initiatives to strengthen its collaboration with various multimedia communities in an effort to reach out to a wider range of audience and foster a more efficient publication process. One of the first efforts was to collaborate with the IEEE International Conference on Multimedia & Expo (ICME), the flagship multimedia conference that has been sponsored by four IEEE societies since 2000, to facilitate the publication of extended versions of top ICME papers in *MM* via a "fast track" review and publication process.

In May 2014, the authors of the top 26 ICME 2014 papers were invited to submit extended versions (with at least 30 percent new material) of their papers to this fast track special issue scheduled to be published in the October–December 2014 issue. We received 15 submissions that span various topics such as audio and video coding, vision and pattern analysis, object tracking, quality assessment, and social media. After a rigorous peer-review process, eight of those submissions were accepted for this special issue, now titled "Hot Topics in Multimedia Research." (Several other fine submissions were also accepted and will be published in early 2015.)

A significant subset of the accepted articles address issues in visual analysis and tracking. In "Local Stereo Matching with Improved Matching Cost and Disparity Refinement," Jianbo Jiao, Ronggang Wang, Wenmin Wang, Shengfu Dong, Zhenyu Wang, and Wen Gao present a technique for improving local stereo matching. They propose a new cost measure to improve the initial matching performance followed by a secondary refinement technique to remove the remaining outliers. In "Multimodal Feature Fusion for 3D Shape Recognition and Retrieval," Shuhui Bu, Shaoguang Cheng, Zhenbao Liu, and Junwei Han present a deep learning framework to fuse 3D shape and 2D view-based features for 3D shape recognition and retrieval.

Gaze-tracking technology is highly valuable in many interactive and diagnostic applications. In "Real-Time Gaze Estimation with Online Calibration," Li Sun, Mingli Song, Zicheng Liu, and Ming-Ting Sun present a novel 3D-model-based gaze-estimation system using a single consumer depth camera (Kinect) with online calibration to constantly improve person-specific eye parameters. The article "Latent Subspace Projection Pursuit with Online Optimization for Robust Visual Tracking" by Risheng Liu, Wei Jin, Zhixun Su, and Changcheng Zhang proposes an online subspace learning technique to address the problem of feature extraction for visual tracking. In "Online Learning a High-Quality Dictionary and Classifier Jointly for Multitask Object Tracking," Baojie Fan, Yang Cong, Yingkui Du, Hao Gao, and Yangdong Tang formulate object tracking as a binary classification problem in a particle filter framework. By minimizing an objective function that takes into account both reconstruction and classification errors, they demonstrate how to obtain a high-quality dictionary and optimal linear classifier jointly.

User locations in social media are increasingly vital to applications such as election prediction, epidemic forecast, and emergency detection. Dan Xu, Peng Cui, Wenwu Zhu, and Shiqiang Yang, in their article “Graph-Based Residence Location Inference for Social Media Users,” define user similarity and location propagation probability and leverage a semisupervised learning algorithm to predict users’ residence locations using their social relationships, textual and visual content, and a small number of known users’ residence locations.

The article “Training Quality-Aware Filters for No-Reference Image Quality Assessment” by Lin Zhang, Zhongyi Gu, Xiaoxu Liu, Hongyu Li, and Jianwei Lu addresses the problem of general-purpose no-reference image quality assessment with the goal of developing a model without any prior knowledge about nondistorted reference images and types of distortions. The key idea is to obtain effective image representations by means of training quality-aware filters.

In the last article, “Context-Adaptive Modeling for Wavelet-Domain Distributed Video Coding,” Linbo Qing and Wenjun Zeng introduce a novel context-adaptive correlation model for distributed video coding (DVC). The proposed bit-plane-based model exploits higher-order statistical correlation. The proposed approach outperforms existing schemes and thus shows that considering higher-order statistics is important for improved DVC performance.

We thank all the authors for their submissions and all the reviewers for their great efforts in providing timely reviews under a very tight schedule. This is just the beginning of a close collaboration between *MM* and major multimedia conferences. We hope you enjoy reading these extended versions of some of the best papers from ICME 2014.

MM

Wenjun Zeng is a professor at the University of Missouri and a principal researcher and research manager at Microsoft Research Asia. He is also the associate editor in chief of *IEEE MultiMedia*. His research interests include mobile-cloud media computing, social media analysis, multimedia communications, and content/network security. Zeng has a PhD in electrical engineering from Princeton University. Contact him at zengw@missouri.edu.

Zicheng Liu is a principal researcher at Microsoft Research, Redmond. He was also one of the ICME

This is just the beginning of a close collaboration between *IEEE MultiMedia* and major multimedia conferences.

2014 TPC cochairs. His research interests include human activity recognition, face modeling and animation, and multimedia signal processing. Liu has a PhD in computer science from Princeton University. Contact him at zliu@microsoft.com.

Eckehard Steinbach is a professor at the Technical University of Munich, Germany. He was also one of the ICME 2014 TPC cochairs. His research interests include multimedia communications, haptics, and 3D image analysis and synthesis. Steinbach has a PhD in electrical engineering from the University of Erlangen-Nuremberg, Germany. Contact him at eckehard.steinbach@tum.de.

NEW
IEEE computer society
STORE

Find the latest trends
and insights for your

- presentations
- research
- events

webstore.computer.org