

Toward Emotional and Social Signals in Multimedia at ACM Multimedia 2014

Every year since 2011, I have attended ACM Multimedia as a participant. Although I submitted papers, participated as an invited speaker for its workshops, co-organized a workshop, and presented a tutorial, my experience has always been somewhat disconcerting. I considered myself a young academic, and it seemed the SIGMM community was revolving around the traditional areas of content, tagging, and retrieval without paying much attention to new emerging areas.

Over the last decade, researchers from the affective computing and social signal processing fields, together with researchers from the human-computer interaction domain, have made many efforts to promote human-centered multimedia by organizing workshops and special sessions as part of multimedia conferences. Despite its enormous potential, this pursuit has not produced the expected outcome of closely linking the multimedia and affective and social signals communities. Thus, my disappointment with the ACM Multimedia conference mainly came from the fact that our efforts did not seem to bear fruit.

To convince the mainstream multimedia community how important affective and social signals are in and for multimedia, Hayley Hung, Bjoern Schuller, and I proposed a new area on “emotional and social signals in multimedia” as part of the ACM Multimedia 2014 Conference. We received a high number of submissions (16 full and 29 short papers), showing the great interest in this new emerging field. The accepted papers were on various topics, including analyzing political debates with visual and EEG (electroencephalography) cues, speech variability and facial emotion recognition, personalizing models for facial expression analysis with parameter transfer, visual sentiment concept analysis, enjoyment

recognition, personality recognition, and depression prediction.

Beyond the new area, we also provided a forum for voicing the opposing views and prejudices in a research panel discussion titled “Looking for Emotional and Social Signals in Multimedia: Where Are Thou?” The panel took place on the first day of the main conference (http://acmmm.org/2014/panel_discussions.html) with presentations and contributions from Elisabeth Andre (University of Augsburg, Germany), Dick Bultermann (FX PAL, US), Alex Hauptmann (Carnegie Mellon University, US), Rainer Lienhart (University of Augsburg, Germany), and Nicu Sebe (University of Trento, Italy). Hayley Hung and I chaired the discussions, during which we could see and hear what the believers and “converts” saw as achievements and challenges, and what was really bothering “the doubters.” Additionally, the panelists voiced the opinions of both sides, and some attendees approached us later to voice their appreciation of the panel and its discussions.

In summary, the new area on emotional and social signals in multimedia was a great success, and it received a significant amount of visibility and interest due to the support and hard work of all the researchers who contributed in a multitude of ways. The conference was able to appreciate the field in several ways:

- Rosalind Picard, founder of the affective computing field, gave a wonderful keynote talk on “Affective Media and Wearables: Surprising Findings”¹ (see Figure 2)
- Yelin Kim and Emily Mower Provost received the Best Student Paper Award for their paper titled “Say Cheese vs. Smile: Reducing Speech-Related Variability for Facial Emotion Recognition.”²

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Figure 1. Panel discussion on “Looking for Emotional and Social Signals in Multimedia: Where Are Thou?” at ACM Multimedia 2014. Panel participants were Elisabeth Andre (University of Augsburg, Germany), Dick Bultermann (FX PAL, US), Alex Hauptmann (Carnegie Mellon University, US), Rainer Lienhart (University of Augsburg, Germany), and Nicu Sebe (University of Trento, Italy).

■ Three workshops were accepted and presented as part of the conference: computational personality recognition workshop, audio-visual emotion recognition challenge, and socially aware multimedia.

Special thanks to the ACM Multimedia 2014 organizers and chairs for their openness and support in making the new area on emotional and social signals in multimedia a success!



Figure 2. Rosalind Picard (center right) with conference organizers (from left to right, Kien A. Hua, C.-C. Jay Kuo, Yong Rui, Ralf Steinmetz, Shih-Fu Chang) after giving a keynote talk on “Affective Media and Wearables: Surprising Findings” at ACM Multimedia 2014.

References

1. R.W. Picard, “Affective Media and Wearables: Surprising Findings,” *Proc. ACM Int’l Conf. Multimedia*, 2014, pp. 3–4.
2. Y. Kim and E. Mower Provost, “Say Cheese vs. Smile: Reducing Speech-Related Variability for Facial Emotion Recognition,” *Proc. ACM Int’l Conf. Multimedia*, 2014, pp. 27–36.

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Expanding Topic Areas at ACM Multimedia

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Since the founding of ACM SIGMM in 1993, ACM Multimedia has been the worldwide premier conference and a key world event to display scientific achievements and innovative industrial products in the multimedia field. This article explains the origins of the conference and its current focus. It also shares a new direction of the role of multiple signals in multimedia.

Toward a Wide Field of Multimedia Research

The ACM Multimedia Conference is and was always in transition toward new research

directions. For many years, the conference was organized along three tracks—multimedia content analysis, multimedia systems, and multimedia applications—but it has continuously grown and extended its topics to the new challenges in the field. Brave new ideas and interactive arts track were introduced as well as multimedia challenges and a fourth track on multimedia interaction.

In 2011, the conference made a transition from tracks to areas, which represent broad, cross-cutting themes of interest to the multimedia community. Every year we now see the

community grow and the number of topics increase and evolve. We have enabled the notion of multimedia to evolve from classical media involving images, video, text, and music to sensor data and social signals. We went from professional narrow-domain content to an extremely large scope and volumes of consumer media data, leading to the birth of “big multimedia data.” We went from relatively simple aggregations of single-modal analysis algorithms to combining multiple modalities in complex and sophisticated ways for better understanding, handling, and accessing digital multimedia content and for delivering immersive multimedia experiences. We started from classic query-based multimedia search paradigms to arrive at technology for social, personalized, and context-aware multimedia consumption.

Some major survey publications and books have appeared along this development, which shows the advancement in the field. This renewal continues and the community appreciates that new researchers are joining our fields and are bringing their understanding of multimedia challenges to the field.

After 2004 and 2008, the SIGMM held a retreat to discuss where the community should go and how it should embrace new topics and advancement in the field in 2014. The multimedia conference should continue to be an open forum for broad interaction among different technical disciplines, and SIGMM should take advantage of the broad community scope to facilitate interdisciplinary collaboration and develop integrated solutions in emerging application areas.

ACM Multimedia 2014 in Topics and Numbers

ACM Multimedia 2014 took place amidst the nice weather of Orlando, Florida. The 2014 conference was organized along 14 areas that cover traditional fields of multimedia as well as new and emerging research directions, promising new technical approaches not traditionally covered at ACM Multimedia and which are reaching out to related communities with complementary expertise. The areas in 2014 were big and broad multimedia, deep learning for multimedia, emotional and social signals in multimedia, media transport and delivery, multimedia and society, multimedia and the crowd, multimedia art, entertainment and culture, multimedia human-computer interaction and quality of experience (QoE), multimedia search and recommendation, multimedia security,

privacy and forensics, multimedia systems and middleware, multimodal analysis and description, music, speech and audio processing in multimedia, and social media and collective online presence. The conference received 665 papers (272 full papers and 393 short papers), which went into the review processing pipeline. Following a strong double-blind review process and an intense face-to-face meeting of the Technical Programm Committee, this year’s conference accepted 55 full and 117 short papers, leading to acceptance rates of 19.2 and 29.9 percent for full and short papers, respectively.

The conference celebrated its 22nd iteration in 2014 with an extensive program consisting of technical sessions covering all aspects of the multimedia field in forms of oral and poster presentations, tutorials, panels, exhibits, demonstrations, and workshops, bringing into focus the principal subjects of investigation, competitions of research teams on challenging problems, and an interactive art program stimulating artists and computer scientists to meet and discover together the frontiers of artistic communication. It attracted more than 500 participants.

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