

Editor's note

The rapid progress in information technology has provided huge opportunities to fully utilize all kinds of information resource. Materials, energy, and information are the three indispensable strategic resources of human society. Information is also one of the most active factors of social production. Vision is an essential approach for human beings to cognize the world: among all the information that human beings can perceive, 83% come from vision. Visual media, with image, video and digital geometry as their representatives, have already become a hot research area.

Recent advances in networking technology have greatly contributed to the rapid growth of visual media in terms of acquisition and propagation. Information visualization is also a powerful means for establishing a harmonious human-machine environment. The intelligent processing of visual media has become a common way to meet many important national demands including the development of national economy, management of political/military affairs, administration of social security, etc. Visual media has such characteristics as huge data size, non-structuration, high dimensions and diversity of semantics. Traditional theories and methods for media processing cannot satisfy these national strategic demands any more. Large-scale real-time processing of visual media, information mining and knowledge extraction from massive visual media are new challenges to modern information technology.

In China, researches on visual media have now been extensively funded and strongly supported by the Chinese government. In 2006, the project—Theories and Methods in Intelligent Processing of Visual Media—was funded by the National Basic Research Program of China (973 Program). Afterwards, many related projects are funded by the National Natural Science Foundation of China. Researches on video analysis and processing, multi-viewpoint video techniques, geometry processing and retrieval are funded by the National High-Tech Research and Development Program of China (863 Program). Supported by these projects as well as many top universities and institutes, now a phalanx has emerged in China, a growing phalanx of innovative researchers on the visual media.

In this special issue, some recent progresses on visual media research are reported. The selected 20 papers, all having gone through strict review process, cover the main topics interested by visual media researchers, including cognition of visual media, content-based security of visual media, data mining and analysis of video content, non-photorealistic rendering, geometric computation, multi-core encoding of multi-view video, etc. It is our hope that this special issue might attract attentions from the world and promote the visual media research.

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