Emerging Issues for Multimedia Analysis and Applications

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1 Multimedia Is Everywhere

In multimedia community, multimedia content such as TV news, sports, movies have been mainly the target of the research and development. In addition to those traditional public ones, personal multimedia content is growing rapidly with advances in technology in computers, storage, sensors and networking. Affordable methods for capture, store and retrieval of human activities become available, and our life are digitized by many different ways. Personal cameras, camera installed mobile phones, and surveillance cameras are widely in use and produce a large amount of multimedia data. Not only audio-visual sensors but also various sensors such as motion sensors, acceleration sensors and RFIDs etc, give rise to many different types of data which reflect human activities. Emerging sensor networks will produce more.

In extreme cases, home-like environments such as Ubiquitous Home full of various sensing devices may capture lives of a family, or wearable sensing devices such as SenseCam, SenseWear etc, may be widely used to capture personal activities. The result of capturing human activities is a huge amount of multimedia data. New applications, different from those of traditional multimedia processing of TV and movies, will appear. Analysis of personal human activities will lead to variety of new applications such as multimedia e-Chronicle, healthcare, care for child and elderly, surveillance, behavioral studies, etc.

2 Challenges

There exist many challenging issues in order to develop new multimedia applications by capture of personal life. Difficulties in handling such data are

- Huge amount of data, which is continuously growing
- A large number of sources and multiple sensing modalities.
- Unstructured content
- Privacy.

The data captured is huge and much unstructured in its nature, differing to the well organized TV programs and movies, which makes retrieval hard. Privacy is always the concern for personal data. Navigation, summarization of personal activities, mining of important events in them and connecting them using a number of

multimodality sensor data are challenging tasks. We tend to think we know ourselves, but in reality, we do not. In the panel, I would like to mention the importance of the personal multimedia analysis and show, as an example, our effort in capturing and retrieval of personal experiences in home-like environment etc.