Modeling, Detecting, and Processing Events in Multimedia

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1. MOTIVATION

Humans think in terms of events and entities. Events provide a natural abstraction of happenings in the real world. The concept of events has a long history in foundational sciences such as philosophy and linguistics. After first developing objects-based and entity-based approaches, computer science research is now addressing the concept of events and building many applications that consider events at least as important as objects. Consequently, we find many different solutions and approaches for modeling, detecting, and processing events. In addition, we find different applications that are based on events and make use of events.

2. RELATED WORK

Conferences and workshops on events in computer science typically deal with the capturing, processing, and management of low-level events such as publish/subscribe systems and middleware solutions [3], complex event processing [1] and event stream processing [8], Semantic Web services [5], and reactivity for the Semantic Web [2].

Our understanding of events is different from the technical, low-level events above. Although this work is very essential for an efficient execution of the applications build on

top of such approaches, the understanding of the concept of events is disconnected from the domain-level of events that the actual users of such applications have to deal with. However, considering multimedia data, its semantics is naturally closely tied to the event(s) it documents.

We apply events to capture and represent human experience, i.e., to describe on a high-level the occurrences in which humans participate. These events are subject to discussions and interpretations by humans [4]. They may be very complex and linked to a variety of modeling aspects [7, 6], namely the participation of living and non-living objects in events, the temporal duration of events, and the spatial extension of objects. In addition, different kind of event relationships shall be supported like mereological relationships (composition of events), causal relationships, and correlation relationships. One also needs to consider the experiential aspect, i.e., the annotation of events with sensor data such as media data. As domain-level events are subject to discussions and interpretations, different contextual points of view to events need to be supported [4]. Such domain-level events are important in a large variety of domains like emergency response, sports, news, law, and others.

3. FOCUS OF THE WORKSHOP

This year's *International Workshop on Events in Multimedia*[1] (EiMM10) is the second edition of the series of EiMM workshops, following the very successful first workshop of this series, EiMM09[2], held last year in Beijing, China, as part of ACM Multimedia 2009.

The focus of the Events in Multimedia series of workshops lies on how to detect, model, and process domain-level events [4] and applications that make use of domain-level events in the context of multimedia data. The EiMM10 workshop brings together researchers from the different areas of the multimedia research community that are interested in understanding the concept of events on domain-level. It presents work in the areas of domain event mod-

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[1] http://www.uni-koblenz.de/confsec/eimm10/
[2] http://www.uni-koblenz.de/confsec/eimm09/

eling, detection of events from multimedia data, processing and composition of events, organization of multimedia data using events as unifying mechanism, and applications of these techniques.

The overall goal and vision of the Events in Multimedia series of workshops is to unify the research that deals with the understanding of domain-level events and converge it into a generalized model that serves as a common understanding of events. Work towards this vision of a common understanding of events are, e.g., the event model E [7] and the formal model of events F [4].

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