Title: PetaMedia: SIG3 – "Indexing" Management Meeting and PetaMedia Workshop on Implicit Human-Centered Tagging

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Attendees

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SIG3 "Indexing" Management meeting starts at 14:00 (04th September 2008)

Apologies sent by Paul Lewis from University of Southampton. He sent two representatives to attend the PetaMedia workshop and expressed interest in joining this SIG in the next meeting.

Introduction

Ebroul Izquierdo (QMUL) delivered the welcome note and finalised the agenda for the meeting. Following which, each participant was asked to introduce their research group and research activities.

- Maja (Imperial College, University of London)
- Alessandro Vinciarelli (IDIAP)
- Anton Nijholt (UT)
- Joep Kierkels (Geneva)
- Janko Calic (US)
- Thierry Urruty (UG)
- Jan Nemrava (UEP)
- Ioannis Patras (QMUL)
- Jong-Seok Lee (EPFL)

Ebroul Izquierdo (QMUL) presented a description of the main objectives of PetaMedia, which consists of following four special interest groups

- SIG1 - Content Distribution, coordinated by EPFL
- SIG2 - Content Processing, coordinated by TUB
- SIG3 - Content Indexing, coordinated by QMUL
- SIG4 - Social Content Retrieval – TUD

Also, a brief presentation of the available funding opportunities was presented by QMUL.

Ebroul Izquierdo (QMUL) identified the partners involved in PetaMedia as:

- Core Partners - TUD, EPFL, QMUL and TUB
- Affiliated Partners – Partners involved through the National Networks.

  - NL: Some partners Netherlands Institute for Research on ICT
  - CH: Partners from Interactive Multimodal Information Management
  - UK: Imperial College, Southampton University, University of Glasgow, which are also partners in the Multimedia Knowledge Management network and University of Surrey
  - DE: Human-Centric Communication Cluster
- Ad-hoc Partners – Partners from outside the national networks. UEP attended the meeting and expressed strong interest in cooperation with this SIG and eventually to join the project as ad-hoc partner.

AP SIG3.1.1 (QMUL): To clarify, TUB and TUD's contribution to SIG3. Date: 2008-09-15

Participants presented their research objectives and potential contribution to SIG3 in PetaMedia.

EPFL: Presented their research interest in multimedia indexing and developing computer interface.

US: Two major contributions were identified: Clustering & classification and Indexing for Social networks. The former will provide a back end analysis of multimedia content, while the latter provides the front end and develops intelligent interfaces for presenting content.

UT: Research activities include analysis and synthesis of non-verbal human behaviour (including speech recognition, linguistic and dialogue analysis, head and body movements analysis, and brain signals analysis) and their application in smart environments and face-to-face interactions.

IDIAP: Research activities include analysis of verbal and non-verbal human behaviour, in particular analysis of social behaviour and social signals from speech and text.

ICL: Research activities include multimodal analysis of human non-verbal behaviour (especially facial behaviour, bodily actions, and vocal outburst like laughter) and their application to human-computer interaction. One of the interesting research activities could include providing feedback to the (automated tagging) system, based on user's behaviour analysis.

UG: Currently, involved in extraction of low-level visual features and high-level visual feature extraction.

Geneva: Research activities include human affect recognition from non-visual signals including physiological signals (EEG, GSR, muscle activity, heart rate, breath volume) and auditory signals. Multimodal analysis of non-visual emotions is another area of research.

UEP: Currently involved in activities involving, complementary video analysis, subtitle detection, entity extraction, event detection, ontology modelling, hypernym discovery, image similarity based on signs.

QMUL: presented a list of research activities currently involved which includes, low-level indexing/description, segmentation, classification activity, observing, sensing facial expressions, EEG, etc. Also, other research includes investigation of biologically inspired systems, multi-objective optimisation, relevance feedback and also using games for tagging multimedia content.

AP SIG3.1.2 (ALL): To provide a list of research/technical contributions to QMUL, which will be further, distributed to all SIG3 participants. Date: 2008-09-15.

AP SIG3.1.3 (QMUL): To create a dedicated reflector for SIG3. Date: 2008-09-15

Ebroul Izquierdo (QMUL) initiated a brain storming session on how to proceed with in the SIG3 in order to define concrete research objectives and how to achieve it.

Jong-Seok Lee (EPFL) and Maja Pantic (ICL) mentioned few research activities for SIG3 including monitoring people working with already tagged multimedia data to determine the quality of the existing tags, i.e., analysing A/V feedback from user and implicitly judging the quality of existing tags and improving those.

Ebroul Izquierdo (QMUL) stressed the importance of having non-intrusive sensors for measuring human-centred information.

Alessandro Vinciarelli (IDIAP) mentioned that, sensor technology in the coming years will improve and probably make it non-intrusive for the users.

Maja Pantic (ICL) mentioned that QMUL should lead SIG3 activities to which associated and ad-hoc (if any) partners involved could contribute. She also made an initial proposal on how to start technical cooperation in this project. Her proposal revolved around the production of benchmarking data for implicit tagging/indexing as defined during the follow-up brainstorming.

Accordingly, it was decided to define activities (or mini-projects) as a roadmap start technical cooperation in SIG3. The first activity defined was with regard to the content creation for analysis.

Activity 1 (mini-project P1): To create benchmarking data to study and assess behaviour of users involved in implicit tagging tasks. Specifically, this project is aimed at collecting a set of media recordings of users being involved in tagging tasks. This recorded data will have a benchmarking character. It will be used by the PetaMedia consortium in the subsequent implicit tagging research and will be made available to the concerned research community.

The data will be used to support research looking at whether users' behaviour can be used to inform the system about i) useful data (tags) that could be used to describe the multimedia content (e.g. 'funny' videos), (ii) the accuracy of the existing media metadata (e.g. if a significant number of user shows confusion or exasperation when retrieving media using

previously annotated content, then the probability that the associated metadata is incorrect increases), and (iii) whether the user is bored or tired while doing manual tagging to trigger the system to automatically change the content that the user is asked to manually tag.

The collected benchmarking data could be further used to develop automatic methods for users' behaviour analysis in the context of multimedia-content-tagging-task. These methods could be also used to develop automated tagging systems that will automatically adapt the utilised tags based on user's reactions.

The following partners will be involved in this activity: QMUL, ICL, Geneva, UT and IDIAP.

AP SIG3.1.4 (QMUL): To organise a Telco before the plenary meeting on 2008-10-06 in order to fine tune the activity plan related to P1.

Janko Calic (US) mentioned that, in the creation of benchmarking data, interfaces play a crucial role, hence should be considered. ICL reminded that, due to the limited resources available, the activity could not be delayed until the interface development phase could be finished. QMUL, mentioned to carry out the creation of benchmarking data in two stages. Hence, in the first phase user interfaces will not be included, and once the interfaces are developed a second phase of improved benchmarking data with intelligent user interfaces could be gathered.

AP SIG3.1.5 (ICL): To create an activity plan, including a set of requirements to be discussed in the next plenary session and proposed to all partners. Date: 2008-10-01.

The activity plan related to AP1.5 will contain three main stages. i) Gathering of multimedia content to be used for the generation of the targeted benchmarking data. In this phase all project partners will be requested to provide content according to the needs of their research activities. Everybody with interest in the PataMedia project will be involved in this phase. ii) Generation of benchmarking data to study and assess behaviour of users involved in implicit tagging tasks. ICL, University Geneva, UT, QMUL and IDIAP will be involved in this phase. iii) verification of the metadata created in phase ii. All partners expressed interest in this activity. Each partner involved in SIG3 will get allocated a number labour-hours and material for metadata verification.

As an additional activity within this mini-project, QMUL proposed to develop a search engine to enable navigation, search and retrieval of multimedia content using both the produced benchmarking metadata and additional metadata generated automatically by CBIR technology. However the main objective of this search engine will be to enable showcasing of the benchmarking data produced in the mini-project. It was stressed during the meeting that such data does not exist and will be very valuable within SIG3 activities.

Maja pointed out to potential privacy and ethical issues related to the gathering of data as aimed in this activity.

AP SIG3.1.6 (QMUL): To clarify the ethical issues with project coordinator.

It was agreed that Imperial College, Southampton University, University of Glasgow and University of Surrey should become the PetaMedia associated partners.

It was also discussed the need to get other key MMKM players involved in SIG3 and was decided to invite University of Sheffield and Open University to join the current group of UK PetaMedia associated members. For this Maja (ICL) suggested to circulate the minutes of the meeting to the MMKM network, with an open invitation. It was agreed to do so before closing the list of associated partners and before the next plenary meeting in Berlin.

Ebroul pointed to the need of a dedicated SIG web-page. This was supported by all the meeting delegates.

AP SIG3.1.7 (QMUL): To develop a dedicated website for SIG3 activities. Date: 2008-10-19.

Summary of Action Points MC Meeting

Action	Responsible	Description	Date	Status
AP SIG3.1.1	QMUL	QMUL will clarify with TUB and TUD's contribution to SIG3	2008-09-15	
AP SIG3.1.2	ALL	Provide a list of research/ technical contributions to QMUL, which will be further, distributed to all SIG3 participants	2008-09-15	
AP SIG3.1.3	QMUL	QMUL will create a dedicated reflector for SIG3	2008-09-15	
AP SIG3.1.4	QMUL	QMUL will organise a Telco before the plenary meeting	2008-10-06	
AP SIG3.1.5	ICL	ICL will create an activity plan, including a set of requirements to be discussed in the next plenary session and proposed to all partners	2008-10-01	
AP SIG3.1.6	QMUL	QMUL will clarify the ethical issues with project coordinator.		
AP SIG3.1.7	QMUL	QMUL will develop a dedicated website for SIG3 activities.	2008-10-19	

SIG3 "Indexing" Technical meeting starts at 10:00 (05th September 2008)

PetaMedia Workshop on Implicit Human-Centered Tagging

Technical Programme

• 10.00 – 11.00: **Key Note Talk**: **Anton Nijholt**
'Girlfriends and Strawberry Jam: Tagging Memories, Experiences, and Events'

• 11.00 – 11.15: Coffee break

• 11.15 – 13.00: **Oral Session 1**: (per talk – 20 min presentation + 5 min discussion)
1) Joep Kierkels, and Thierry Pun (University of Geneva)
Towards detection of interest during movie scenes
2) Michel Valstar, and Maja Pantic (Imperial College London)
Automatic facial expression analysis
3) Stavros Petrids, and Maja Pantic (Imperial College London)
Audiovisual laughter detection
4) Mohammad Soleymani, Guillaume Chanel, Joep Kierkels, Thierry Pun (University of Geneva)
Valence-Arousal Representation of Movie Scenes Based on Multimedia Content Analysis and User's Physiological Emotional Responses

• 13.00 – 14.00: Lunch break

• 14.00 – 15.45: **Oral Session 2**: (per talk – 20 min presentation + 5 min discussion)
5) Ioannis Patras (Queen Mary University)
Body Gesture Analysis for Implicit Video Tagging
6) Janko Calic, Marta Mrak, and Ahmet Kondoz (University of Surrey)
Visualising Temporal Features for Implicit Video Tagging
7) Donn Morrison, Stephane Marchand-Maillet, and Eric Bruno (University of Geneva)
Improving semantic multimedia indexing with long-term learning of user interaction
8) Rabeeh Abbasi, Marcin Grzegorzek, and Steffen Staab (University of Koblenz)
Merging Tagging and Low Level Image Features in Folksonomies to Improve Image Classification

• 15.45 – 16.00: Coffee break

• 16.00 – 16.30: **Discussion:** Ebroul Izquierdo (chair)

• 16.30: Closing