

Chronology of the NoE

Research

Events

Introduction

PetaMedia - or Peer-to-Peer Tagged Media - is an FP7 Network of Excellence in the area of Networked Media. The NoE started on 1 March 2008 and brings together four national research networks in the Netherlands, Switzerland, United Kingdom, and Germany. An important objective of PetaMedia is to create a people-network of European junior and senior researchers in the field collaborative multimedia content analysis and tagging, exploiting P2P and social networks. To build such network, three lines of development are followed:

- Building focused topical cores starting from the expertises of the core and permanently associated partners.
- Stimulating junior researchers in and outside Europe to explore the fields of multimedia content analysis and peer-2-peer systems at large, and to help them to get state-of-the-art knowledge by participating in conferences, workshops, and summer schools.
- Argue to the separate multimedia and networking communities, and in particular to senior researchers, that the combination of multimedia content analysis and tagging on the one hand, and (social and technical) networking on the other hand, makes good sense and will bring about new solutions and requirements that will help to further the important field of search engines in Europe.

This newsletter presents the activities of PetaMedia in its first 9 months. For more information and documentation, please refer to our website: <http://www.petamedia.eu>

Inald Lagendijk

Chronology

13-14 March 2008 - Kick-off Meeting



The PetaMedia NoE started with a plenary meeting at Delft University of Technology. All core partners as well as the four national networks and our EC project officer, Loretta Anania, attended this event. On Thursday 13 March many of the

participants presented themselves and their institutions.



The day closed with a dinner in “De Prinsenkelder”, a restaurant in the picturesque old town of Delft. Friday morning was mainly dedicated to more in-depth discussions about the scientific setup of PetaMedia. These discussions led to the initiative of forming four Special Interest Groups (SIGs).

27 May 2008 - Tribler Workshop

A one-day Tribler course was held in Delft to give an introduction to advanced P2P technology. Most of the participants came from the P2P Next Consortium (of which TU Delft is a partner), but also PetaMedia members attended.

<http://www.tribler.org/trac/wiki/TriblerCourse>

1 - 5 Sept 2008 - SSMS'08

The Summer School on Multimedia Semantics 2008, co-sponsored by PetaMedia, was held at the Mediterranean Agronomic Institute of Chania, on the island of Crete, Greece.



Several PetaMedia participants from the Netherlands, Switzerland, and Germany attended and presented their work in the poster sessions; furthermore, an introductory poster on PetaMedia was presented. Lynda Hardman from CWI in Amsterdam was among the lecturers. PetaMedia contributed summer school grants for two PhD students.

<http://www.mesh-ip.eu/ssms08.aspx?Page=ssms08>

4 Sept 2008 - SIG 3 Meeting

The first meeting of SIG 3 - Indexing - took place at Queen Mary, University of London (QMUL), with participants from UK, Switzerland, the Netherlands, and the Czech Republic. Research activities of the participants were surveyed in order

to set the next action points of SIG 3, including proposals for mini-projects.

5 Sept 2008 - HCT Workshop

Following the SIG meeting on indexing, QMUL organized the PetaMedia Workshop on Implicit Human-Centred Tagging (HCT). The event consisted of eight oral presentations, preceded by a keynote talk by Anton Nijholt (University of Twente, Netherlands) and followed by a discussion chaired by Ebroul Izquierdo.

19 Sept 2008 - SIG 1 Meeting

SIG 1 - Content Distribution - held its first meeting at EPFL, Lausanne. Members of all core partners and Swiss and German network partners attended and presented their work. A mini-project was proposed.

22 Sept 2008 - Dutch Branch Meeting

In preparation of the SIG 4 meeting, PetaMedia representatives of TU Delft and Dutch network partners discussed funding of the national PetaMedia network and decided on project proposals to the NoE.

23 Sept 2008 - SIG 4 Meeting

The first meeting of SIG 4 - Social Content Retrieval - was held at TU Delft, with participants of all core partner countries attending. After an invited talk by Mauro Barbieri from Philips Research (NL), the participants presented related research at their institutions. A creativity boosting game was arranged, the results of which were discussed and melted down to project ideas.

8 Oct 2008 - SIG 2 Meeting

The last of the first SIG meetings, of SIG 2 - Processing - took place at TU Berlin. The participants (from four core partners and one network partner) reported work related to SIG 2 and discussed future research topics, which led to project ideas to be presented at the plenary meeting.

12 Oct 2008 - ICIP Workshop

Within the IEEE International Conference on Image Processing (ICIP), the 1st ICIP Workshop on Multimedia Information Retrieval was organized by Ebroul Izquierdo, who acted as workshop chairman, and Alan Hanjalic as technical co-chairman. The workshop included six invited talks (one of which by Inald Lagendijk) oral and poster presentations, and a panel discussion chaired by Inald Lagendijk, and received considerable attention.

<http://icip08-mir.qmul.net/index.htm>

20 - 21 Oct 2008 - 1st PYTIM

The second plenary meeting of PetaMedia, which was also the first PetaMedia Yearly Technology Integration Meeting (PYTIM), was held at TU Berlin. This first of three PYTIMs (which form

Deliverable D2.2) also included a breakout session of the Network Steering Board.



On the first day, the deliverables issued by then as well as the mini-project proposals were presented. A debating workshop followed, in which controversial statements relating to multimedia usage were discussed and voted on in the style of the British parliament.



The second day started with presentations of ongoing work, discussion of the mini-project proposals, and breakout sessions. In the afternoon, a workshop on peer-to-peer technology was held by external experts.

29 Oct 2008 - PetaMedia reaches out to Tsinghua University



In October 2008, Inald Lagendijk met professors and the dean of the faculty of Computer Science to discuss the outreach of PetaMedia to Tsinghua University. The objective was to let Tsinghua University become an ad-hoc affiliated partner in PetaMedia. The agreement was made for a visiting scientist or PhD student to work on the issue of cultural differences in collaborative tagging at Delft University of Technology for a period of 3 months.

Inald Lagendijk

25 - 27 Nov 2008 - ICT Event

The European Commission's ICT 2008 Event was held in Lyon, France. PetaMedia sent two PhD

students to attend the event, Francesca De Simone from EPFL and Tomas Piatrik from QMUL.

http://ec.europa.eu/information_society/events/ict/2008/index_en.htm

Ongoing Research

Improving the Tribler Search Experience

Researchers from TU Delft and TU Berlin are currently joining efforts to extend TU Delft's Tribler by a "clicklog" component that uses implicit feedback from users to improve their search results. Tribler, based on a 100% server-free P2P protocol, relies on peers constantly exchanging information about stored files, searches, and preferences.

The current work aims to extend this protocol such that for each clicked result, its position and the search terms used are stored. Analyzing this data, the client software is able to perform search result optimizations normally only possible for search engine providers. For example, if, for a given search term, a file is ranked low by regular criteria, but the clicklog data shows it to be consistently selected despite its bad position, the client software could raise that file's ranking, improving the search experience for the user.

From a machine learning point of view, this problem is a tough version of ordinal regression as, for efficiency reasons, only positive examples can be stored and transmitted, whereas most approaches require positive and negative (unclicked) examples alike. Once the new protocol is deployed, the data gathered by any client can also be used to evaluate different ranking schemes against each other by their performance "in the wild".

Furthermore, the collected triples of documents, users, and associated keywords can be used to bootstrap a tagging system in a later step.

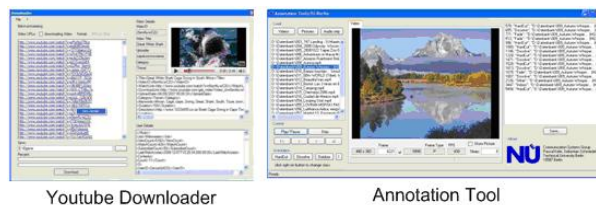
Results of this cooperation are expected to become publicly available with the next major release of Tribler.

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Nicolas Neubauer

Mini-Project: Tools for Tag Generation

Within the mini-projects "Social media data acquisition" and "Tools for tag generation" a tool was completed that can download video content with associated metadata and user information from YouTube.com. Using this YouTube Downloader, a "Travel & Events" database was created for the mini-project.



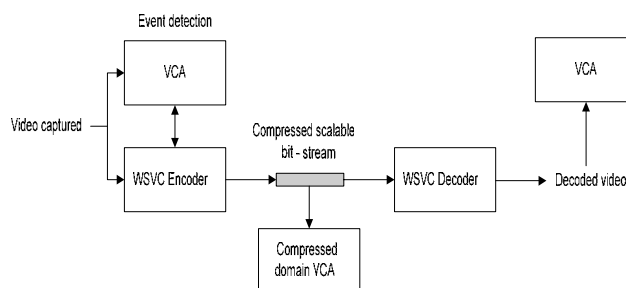
The shots of this database were independently annotated by Stevan Rudinac (TUD) and Matthias Zappe (TUB). On this base, the shot detection which has already promising results and key frame extraction are applied. Associated applications are e. g. indoor/outdoor classification or image clustering with the objective of finding similar shots (both currently being developed).

Sebastian Schmiedeke, Pascal Kelm

Event Driven Scalable Video Coding Framework

Researchers from QMUL are currently working on to extend the capacities of wavelet-based scalable video coding (WSVC) framework developed in QMUL. The scalability features of the WSVC are adapted with respect to event in the video sequence. The present work is mainly focus on the surveillance scenario where it is acutely needed to focus on the moving part of the video rather than static part for example, background. However, it is easily adapted with respect to transmission scenario with respect to available bandwidth.

In existing surveillance systems video captured by CCTV is usually encoded using conventional compression technology, such as MPEG-1/2 or H.264/AVC. These systems encode the video signal regardless the video's significance as determined by video content analysis (VCA) modules used for automatic recognition, detection, tracking, etc. The reason is obvious - when using a conventional coder it is almost impossible to adapt the compressed stream to the scene properties in terms of activity and degree of event significance. Thus, the output of VCA cannot be used directly after or during signal encoding and transmission, unless an expensive and in several cases unfeasible transcoding process is carried out.



A generic event driven scalability system

The basic principle behind the current research is to use different encoding settings for time segments representing different events in a surveillance video. At each time instance the WSVC encoder communicates with the VCA

module (background subtraction and tracking) as shown in the figure. When the input video is essentially static the output of the background subtraction does not contain foreground regions. This can be used to signal to the WSVC encoder to adapt captured video at low spatio-temporal resolution and quality. This allows, for instance, storing and/or transmitting the portions of the video containing long, boring, static scenes using low quality frame-rate and spatial resolution. On the other hand, when some activity in the captured video is detected, the VCA module notifies the WSVC encoder to automatically switch its output to a desired much higher spatio-temporal resolution and quality video. Therefore, decoding and use of the video at different spatio-temporal resolutions and qualities corresponding to different events is achieved from a single bit-stream, without multicasting or complex transcoding. Moreover, additional optional adaptation to lower bit-rate is also possible without decoding the video. This is, for instance, very useful in cases where video has to be delivered to a device with a low display capability. Using this approach, the bit-rate of video portions that are of low interest is kept low while the bit-rate of important parts is kept high. In many realistic applications it can be expected that large portions of the captured video have no events of interest. Thus, the proposed model leads to significant reduction of resources without jeopardizing the quality of any off-line event detection module that may be present at the decoder.

Naeem Ramzan

Upcoming Events

29 Jan 2009 - EAB workshop

The first meeting with members of the PetaMedia External Advisory Board (EAB) will take place at QMUL in London, organized by the PetaMedia Task Force (Naeem Ramzan, QMUL, Martha Larson, TUD, Frédéric Dufaux, EPFL, and Kai Clüver, TUB). Main objective will be a discussion of the achievements and future directions of the NoE and to gain recommendations from the EAB.

2 - 3 April 2009 - 1st Review Meeting

The first annual review of PetaMedia will take place in Delft.

6 April 2009 - ECIR Workshop

At the European Conference on Information Retrieval (ECIR 2009) in Toulouse, France, the Workshop on Information Retrieval in Social Networks is organized by Stéphane Marchand-Maillet (U Geneva) and Arjen de Vries (CWI, TUD). This workshop is a nice opportunity for publishing PetaMedia-related research. Furthermore, there will probably be a Special Issue in an IR journal for extended selected papers. The organizers look forward to receiving contributions from the PetaMedia NoE.

http://vipser.unige.ch/doku.php/events:ir_sn

Stéphane Marchand-Maillet

4 - 5 May 2009 - 3rd Plenary Meeting

The third PetaMedia plenary meeting will take place at QMUL immediately preceding WIAMIS'09.

6, 7, or 8 May 2009 - WIAMIS Special Session

Within the International Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS), to be held in London, the PetaMedia Task Force is organizing a Special Session "People, Pixels, Peers: Interactive Content in Social Networks". Currently, the submissions are being reviewed.

<http://wiamis2009.qmul.net/index.php>

29 - 31 July 2009 - QOMEX

The First IEEE International Workshop on Quality of Multimedia Experience, which will be held in San Diego CA, USA, is co-organized by Touradj Ebrahimi. PetaMedia will be technical sponsor to the event.

<http://www.qomex.org/>

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(taken from <http://de.wikipedia.org/wiki/Ethernet>)*

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