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Introduction

Dear Reader,

Welcome to the second PetaMedia newsletter. I am glad to inform you that PetaMedia successfully passed its first year review. With the positive outcome of the review, the evaluators strongly suggested PetaMedia to give more attention to reaching out to so-called “ad hoc” partners. PetaMedia’s ad-hoc partner programme encompasses

- collaborative research of Ph.D. students with PetaMedia core partners,
- short visits of senior researchers to PetaMedia network partners,
- travel grants for Ph.D. students.

Details can be found on PetaMedia's website <http://www.petamedia.eu>

In the past months, PetaMedia has worked hard to structure the integrative research plans in years 2 and 3. These plans build on the currently operational integrated research projects (IRPs), and will eventually culminate in a number of field trials that are aligned with the PetaMedia scenarios. The details of the IRPs and field trials can be found in Deliverable D6.1 (Integrative Research Plan), available from PetaMedia’s website. Integral part of the planning is the NEM/Industry workshop that this Newsletter reports also upon.

I hope you find this newsletter informative.

*Prof. dr. Inald Lagendijk
Project co-ordinator*

Chronology

29 Jan 2009 - EAB Workshop



The first meeting with members of the PetaMedia External Advisory Board (EAB) took place at QMUL in London. There was a series of presentations, followed by fruitful discussions and useful

comments from the EAB, which in turn resulted in recommendations for some improvements and future directions of the NoE.

6 Feb 2009 - H-C3 Opening Session

The innovation centre of the German HC-3 network was opened at TUB with the participation of university and Berlin government officials. The event included a keynote address given by David Culler from UC Berkeley and several presentations of ongoing activities, and closed with a reception in connection with a demo and poster session.

http://www.h-c3.org/index_en.html

2 - 3 April 2009 - 1st Review Meeting



The first annual review took place at TU Delft. Four reviewers and our EU project officer, Loretta Anania, evaluated the achievements of the NoE and gave valuable input to the planning of the next weeks and months. PetaMedia results were presented during the review in the form of a PetaMedia poster and demo session that was open to the public. All in all, it was a very constructive review meeting and the PetaMedia participants were satisfied with the outcome.

6 April 2009 - ECIR Workshop



At the European Conference on Information Retrieval (ECIR 2009) in Toulouse, France, a Workshop on Information Retrieval in Social Networks, sponsored by PetaMedia, was co-organized by Stéphane Marchand-Maillet (U Geneva) and Arjen de Vries (CWI, TUD). The half-day programme included 7 papers that were highly relevant to the topics of Petamedia. About 30 people participated and contributed to quite a lively discussion. The workshop has shown the great interest

of the community for a place to present the combination of IR and social network analysis.

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

4 - 5 May 2009 - 3rd Plenary Meeting



The third PetaMedia plenary meeting was held at QMUL immediately preceding WIAMIS'09. On the first day, the status of the integrative research projects (IRPs) was discussed and EAB members Ramesh Jain and Tsuhan Chen each gave a presentation. The second day was devoted to discussing use cases and field trials, planning of joint activities, and presentations of ongoing exploratory research projects (ERPs) by members of the national networks.

6 - 9 May 2009 - WIAMIS

The 10th International Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS), co-organized by Ioannis Patras (QMUL) and co-sponsored by PetaMedia, was held in the Brunei Gallery at the School of Oriental and African Studies in London. PetaMedia contributed three student travel grants.



Within the workshop, the PetaMedia Technical Co-ordination Team organized a Special Session "People, Pixels, Peers; Interactive Content in Social Networks" on 6 May. Five papers from TUD, U Geneva, QMUL, U Hannover, and TUB were presented.

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

26 - 27 May 2009 - CHORUS Conference



At the CHORUS final conference in Brussels, PetaMedia participated with an exhibition booth containing posters and a demo. Furthermore, Alan Hanjalic presented the NoE within a project presentation session on 27 May. Martha Larson (TUD) co-presented the VideoCLEF benchmark evaluation activity.

<http://www.ist-chorus.org/conference.asp>

23 June 2009 - "Tools for Tag Generation" IRP and "Near2Me" Group Meeting



The meeting of the "Tools for Tag Generation" IRP and the "Near2Me" use case group was held at the University of Geneva. It was suggested that in the second generation, the "Social network enhanced tagging" IRP and the "Tools for Tag Generation" IRP should move forward as a "Near2Me" IRP. A workplan for the preparation of the field trials for "Near2Me" was developed. The next IRP meeting will be held in 6 months.

Sebastian Schmiedeke

Upcoming Events

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/>

14 - 16 Sept 2009 - 2nd PYTIM

The second PetaMedia Yearly Technology Integration Meeting (PYTIM), at the same time the fourth plenary meeting of the NoE, will be held in Lausanne at EPFL.

30 Sept 2009 - Industry Workshop

The Industry Workshop will bring together PetaMedia researchers and invited members of industry--e.g., business developers, marketing people, strategists--for discussion and exchange about adoption and market impact of PetaMedia-related technology. According to the current state

of planning, the workshop will be held parallel with the 2009 NEM summit “Towards Future Media Internet” in Saint Malo, France.

<http://www.nem-summit.eu/>

Ongoing Research

Research in Quality Assessment of Multimedia Contents at MMSPG

Measurement of perceived quality plays a fundamental role in the context of multimedia services and applications. Quality evaluation is needed in order to benchmark video and audio processing systems and algorithms, to test end-devices performance, and to compare and optimize algorithms and their parameter settings. The Multimedia Signal Processing Group (MMSPG), led by Prof. Touradj Ebrahimi, is active in research in both objective and subjective quality assessment of multimedia contents, i.e. still pictures, video sequences, and audio-visual sequences. Pictures of the MMSPG test space to perform formal subjective visual quality tests are shown below.



The space includes a high-resolution monitor (2560 x 1600 pixels) with a calibration tool, a powerful server able to display up to high resolution uncompressed video sequences, and a lighting system with a colour temperature of 6500 K. A surround audio system will be added soon to allow performing tests in immersive audio-visual scenarios.

Francesca De Simone

Student Reports from WIAMIS'09

PetaMedia awarded three travel grants in order to enable PhD students from outside the NoE to attend WIAMIS 2009. In return, the beneficiaries had to write reports of which excerpts are given here:

The tenth International Workshop on Image Analysis for Multimedia Interactive Services was held in London and consisted in 21 oral presentations, 35 poster presentations and 18 talks presented in four special sessions. The event was chaired by Ioannis Patras and Nicu Sebe. In the first two days the oral presentations were preceded by keynote talks of Andrew Zisserman (University of Oxford, England) and Fernando Pereira (Instituto Superior Técnico (IST) and Instituto de Telecomunicações, Lisbon, Portugal). During WIAMIS 2009 the committee also assigned two paper prizes. The first of these was the Best Student Paper Prize awarded to Gloria Haro for the

paper entitled “3D shape from multi-camera view by error projection minimization”. The second prize, named Best Paper Prize, was conferred to Iordanis Mpipieris for the paper “Bilinear Decomposition of 3-D Face Images: An Application to Facial Expression Recognition”. WIAMIS 2010 will be held in Brescia, Italy, on 12-14 April 2010.

*Luca Piras
(University of Cagliari, Italy)*

Attending the WIAMIS 2009 International Workshop was an important experience in which I had the opportunity to meet other researchers on the field of Image Analysis and discuss with them the field’s development. The conference topics were very interesting, invited talks were very challenging, and I was able to get informed on the progress of science in areas such as Motion Analysis, Content-Based Retrieval, 3D Analysis, and Video analysis for Interactive Multimedia Services.

It was a great opportunity for me to present the paper entitled ‘High Capacity Reversible Data Hiding using Overlapping Difference Expansion’ coauthored by E. Chrysochos, E. Varsaki, V. Fotopoulos, A. Skodras. The presentation took place on a poster session, where remarkable papers were presented. I had the chance to discuss with researchers from all over the world working on the same area with us and to hear all about signal processing news evolution.

In conclusion, I would like to add that I found my attendance to such a good organized conference very positive.

*Eleni Varsaki
(Hellenic Open University, Patras, Greece)*

The workshop programme included oral, poster, invited presentations, and sessions on special topics. I was impressed by the keynote presentations given by professor Andrew Zisserman and professor Fernando Pereira entitled “Human Pose Estimation and Retrieval in Videos” and “Video Compression: Still Evolution or Time for Revolution?”, respectively. The presentations in the oral, poster, and special sessions also taught me a lot. The researchers from all over the world presented their excellent work, and I learnt the latest technological advances in interactive multimedia services and in multimedia indexing, search, retrieval, and browsing.

My paper entitled “A Fusion Method for Multi-spectral and Panchromatic Images Based on HSI and Contourlet Transformation” was arranged for poster presentation. In this poster session, I discussed my work with other researchers and they gave me lots of suggestions; these suggestions will help me improve my work in the future.

Finally, I appreciate very much that PetaMedia provided me with the financial grant, which will help to cover part of the costs for my travel. I am

glad to have had the opportunity to attend WIAMIS 2009.

Menxin Song
(Beijing Normal University, China)

Publications

Recent PetaMedia Publications

P. Vajda, F. Dufaux, T. Ha Minh, T. Ebrahimi, “Graph-based approach for 3D object duplicate detection”, *Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS’09)*, London, UK, May 2009.

Stevan Rudinac, Martha Larson, Alan Hanjalic, “Exploiting Visual Reranking to Improve Pseudo-Relevance Feedback”, *Special Session “People, Pixels, Peers; Interactive Content in Social Networks”, 10th Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS)*, London, UK, May 2009.

Zhijie Zhao, Jörn Ostermann, Hexin Chen, “Multiple Description Scalable Coding for Video Streaming”, *Special Session “People, Pixels, Peers; Interactive Content in Social Networks”, 10th Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS)*, London, UK, May 2009.

Pascal Kelm, Sebastian Schmiedeke, Thomas Sikora, “Feature-based Video Key Frame Extraction for Low Quality Video Sequences”, *Special Session “People, Pixels, Peers; Interactive Content in Social Networks”, 10th Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS)*, London, UK, May 2009.

Stéphane Marchand-Maillet, Enikő Székely, Eric Bruno, “Optimising strategies for the exploration of social networks and associated data collections”, *Special Session “People, Pixels, Peers; Interactive Content in Social Networks”, 10th Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS)*, London, UK, May 2009.

Giuseppe Passino, Ioannis Patras, Ebroul Izquierdo, “Image Semantic Labelling via Heterogeneous Low-level Descriptors Integration in a Conditional Random Field”, *Special Session “People, Pixels, Peers; Interactive Content in Social Networks”, 10th Int. Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS)*, London, UK, May 2009.

N. Neubauer, K. Obermayer, “Tag Spam Creates Large Non-Giant Connected Components”, *5th Int. Workshop on Adversarial Information Retrieval on the Web*, Madrid, Spain, April 2009.

D. Morrison, S. Marchand-Maillet, E. Bruno, “Modelling long-term relevance feedback”, *ECIR Workshop on Information Retrieval over Social Networks*, Toulouse, France, April 2009.

A. Nijholt, “Girlfriends and Strawberry Jam: Tagging Memories, Experiences, and Events for Future Retrieval”, *11th Int. Symposium on Social Communication*, Santiago de Cuba, January 19-23, 2009.

F. De Simone, F. Dufaux, T. Ebrahimi, C. Delogu, V. Baroncini, “A subjective study of the influence of color information on visual quality assessment of high resolution pictures”, *Int. Workshop on Video Processing and Quality Metrics for Consumer Electronics (VPQM’09)*, Scottsdale, Arizona, USA, January 2009.

M. Soleymani, G. Chanel, J. Kierkels, T. Pun, “Affective characterization of movie scenes based on multimedia content analysis and user’s physiological emotional responses”, *IEEE Int. Symposium on Multimedia (ISM’09)*, Berkeley, California, USA, December 2008, pp. 228-235.

Ronald Glasberg, Sebastian Schmiedeke, Hüseyin Oğuz, Pascal Kelm, Thomas Sikora, “Real-time detection of sport in MPEG-2 sequences using high-level AV-descriptors and SVM”, *3rd Int. Conf. on Digital Information Management (ICDIM 2008)*, 13-16 Nov. 2008

M. Soleymani, G. Chanel, J. Kierkels, T. Pun, “Affective ranking of movie scenes using physiological signals and content analysis”, *ACM Multimedia 2008, Workshop on Many Faces of Multimedia Semantics (MS’08)*, Vancouver, BC, Canada, October 2008, pp. 32-39.

N. Ramzan, E. Izquierdo, “Efficient Scalable Video Transmission Based On Two-dimensional Error Protection Scheme”, *15th IEEE Int. Conf. on Image Processing (ICIP)*, San Diego, California, USA, Oct. 2008.

N. Neubauer, K. Obermayer, “Predicting Tag Spam Examining Cooccurrences, Network Structures and URL Components”, *ECML PKDD Discovery Challenge (RSDC’08), Workshop at 18th Europ. Conf. on Machine Learning (ECML’08) / 11th Europ. Conf. on Principles and Practice of Knowledge Discovery in Databases (PKDD’08)*, 2008.

J. M. Kierkels, T. Pun, “Towards detection of interest during movie scenes”, *2008 PetaMedia Workshop on Implicit, Human-Centered Tagging (HCT)*, Queen Mary, University of London, UK, September 2008.

M. Soleymani, G. Chanel, J. Kierkels, T. Pun, “Valence-arousal representation of movie scenes based on multimedia content analysis and user’s physiological emotional responses”, *2008 PetaMedia Workshop on Implicit, Human-Centered Tagging (HCT)*, Queen Mary, University of London, UK, September 2008.

Publications to appear

N. Neubauer, K. Obermayer, “Hyperincident components of tagging networks”, *HyperText 2009*, Torino, June 2009.

J.-S. Lee, F. De Simone, T. Ebrahimi, “Video coding based on audio-visual attention”, *IEEE Int. Conf. on Multimedia and Expo (ICME’09)*, New York City, June 2009.

J. Kierkels, M. Soleymani, T. Pun, “Queries and tags in affect-based multimedia retrieval”, *IEEE Int. Conf. on*

Multimedia and Expo (ICME'09) - Special Session on Implicit Tagging, New York City, June 2009.

E. Bruno, M. Von Wyl, S. Marchand-Maillet, "Large-scale cross-modal indexing and preference-based retrieval for annotated image data", *IEEE Int. Conf. on Multimedia and Expo (ICME'09) - Special Session on Challenges in Large-Scale Image Retrieval*, New York City, June 2009.

Ioannis Konstas, Vassilios Stathopoulos, Joemon M. Jose, "On Social Networks and Collaborative Recommendation", *32nd Annual ACM SIGIR Conf. (SIGIR 2009)*, Boston, July 2009

J.-S. Lee, F. De Simone, T. Ebrahimi, "Influence of audio-visual attention on perceived quality of standard definition multimedia content", *1st Int. Workshop on Quality of Multimedia Experience (QoMEX'09)*, San Diego, July 2009

Naeem Ramzan, Toni Zgaljic, Ebroul Izquierdo, "An Efficient Optimisation Scheme for Scalable Surveillance Centric Video Communications", *ELSEVIER Journal of Signal Processing: Image Communication*, 2009.

G. Chanel, J. Kierkels, M. Soleymani, T. Pun, "Short-term emotion assessment in a recall paradigm", *Int. Journal of Human-Computer Studies*.

M. Soleymani, G. Chanel, J. Kierkels, T. Pun, "Affective characterization of movie scenes based on content analysis and physiological changes", *Int. Journal on Semantic Computing*.

D. Morrison, E. Bruno, S. Marchand-Maillet, "Capturing the semantics of user interaction: A review and case study", book chapter in *Emergent Web Intelligence*, Springer.

Editorial deadline: 30 June 2009

Editors: Inald Lagendijk, Martha Larson, Pien Rijnink (TUD), Joemon Jose (U Glasgow), Naeem Ramzan (QMUL), Stéphane Marchand-Maillet (U Geneva), Jong-Seok Lee (EPFL), Sebastian Schmiedeke, Pascal Kelm, Kai Clüver (TUB)

Cover image by Pascal Kelm and Sebastian Schmiedeke (TUB)

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