

Volume 5, Number 1
March 2013

Published by the Association for Computing Machinery
Special Interest Group on Multimedia

SIGMM RECORDS

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**Association for
Computing Machinery**

Advancing Computing as a Science & Profession

ISSN 1947-4598
<http://sigmm.org/records>

SIGMM Records

Volume 5, Issue 1, March 2013 (ISSN 1947-4598)

Editorial

Dear Member of the SIGMM Community, welcome to the first issue of the SIGMM Records in 2013.

This issue is full of opportunities that SIGMM gives you in 2013. Inside you find the calls for nominations for SIGMM's three main awards: The SIGMM Technical Achievement Award, awarded for lasting contributions in our field, the SIGMM Award for Outstanding PhD Thesis, awarded for the best thesis in our field that was defended in the 12 months of 2012, and the Nicolas D. Georganas Best Paper Award for the best paper that was published in an issue of TOMCCAP in 2012.

One of the major changes in SIG life is upcoming: SIGMM elects new chairs, and we want to remind you to cast your vote. Our current chair, Klara Nahrstedt, gave an interview for the Records on the issue of ACM Fellowships.

Three PhD thesis summaries are included in this issue, and in our regular columns, you can read news from the 103rd MPEG meeting, in the education column you can learn about a practice book on visual information retrieval, and a toolset for DASH is presented in the open source column.

Of course, we include also a variety of calls for contribution. Please give attention to two particular ones: TOMCCAP is calling for special issue proposals, a major opportunity because TOMCCAP publishes only one special issue per year; and details about the ACM Multimedia Grand Challenges of 2013 are described in some detail. A lot of the other included calls refer to tracks and workshops of ACM Multimedia 2013, but also included are calls for some other events, and open positions.

Last but most certainly not least, you find pointers to the latest issues of TOMCCAP and MMSJ, and several job announcements.

We hope that you enjoy this issue of the Records.

The Editors

Stephan Kopf, Viktor Wendel, Lei Zhang, Pradeep Atrey, Christian Timmerer, Pablo Cesar, Mathias Lux, Carsten Griwodz

MPEG Column: 103rd MPEG Meeting

– original post by *Multimedia Communication blog*, Christian Timmerer, AAU



The 103rd MPEG Meeting

The **103rd MPEG meeting** was held in Geneva, Switzerland, January 21-15, 2013. The official press release can be found here (doc only) and I'd like to introduce the new *MPEG-H standard (ISO/IEC 23008)* referred to as **high efficiency coding and media delivery in heterogeneous environments**:

- Part 1: MPEG Media Transport (MMT) - *status*: 2nd committee draft (CD)
- Part 2: High Efficiency Video Coding (HEVC) - *status*: final draft international standard (FDIS)
- Part 3: 3D Audio - *status*: call for proposals (CfP)

MPEG Media Transport (MMT)

The MMT project was started in order to address the needs of modern media transport applications going beyond the capabilities offered by existing means of transportation such as formats defined by MPEG-2 transport stream (M2TS) or ISO base media file format (ISOBMFF) group of standards. The committee draft

was approved during the 101st MPEG meeting. As a response to the CD ballot, MPEG received more than 200 comments from national bodies and, thus, decided to issue the 2nd committee draft which will be publicly available by February 7, 2013.

High Efficiency Video Coding (HEVC) – ITU-T H.265 | MPEG HEVC

HEVC is the next generation video coding standard jointly developed by ISO/IEC JTC1/SC29/WG11 (MPEG) and the Video Coding Experts Group (VCEG) of ITU-T WP 3/16. Please note that both ITU-T and ISO/IEC MPEG use the term “high efficiency video coding” in the title of the standard but one can expect – as with its predecessor – that the former will use ITU-T H.265 and the latter will use MPEG-H HEVC for promoting its standards. If you don’t want to participate in this debate, simply use high efficiency video coding.

The MPEG press release says that the “HEVC standard reduces by half the bit rate needed to deliver high-quality video for a broad variety of applications” (note: compared to its predecessor AVC). The editing period for the FDIS goes until March 3, 2013 and then with the final preparations and a 2 month balloting period (yes/no vote only) once can expect the International Standard (IS) to be available early summer 2013. Please note that there are no technical differences between FDIS and IS.

The ITU-T press release describes HEVC as a standard that “will provide a flexible, reliable and robust solution, future-proofed to support the next decade of video. The new standard is designed to take account of advancing screen resolutions and is expected to be phased in as high-end products and services outgrow the limits of current network and display technology.”

HEVC currently defines three profiles:

- Main Profile for the “Mass-market consumer video products that historically require only 8 bits of precision”.
- Main 10 Profile “will support up to 10 bits of processing precision for applications with higher quality demands”.
- Main Still Picture Profile to support still image applications, hence, “HEVC also advances the state-of-the-art for still picture coding”

3D Audio

The 3D audio standard shall complement MMT and HEVC assuming that in a “home theater” system a large

number of loudspeakers will be deployed. Therefore, MPEG has issued a Call for Proposals (CfP) with the selection of the reference model v0 due in July 2013. The CfP says that MPEG-H 3D Audio “might be surrounding the user and be situated at high, mid and low vertical positions relative to the user’s ears. The desired sense of audio envelopment includes both immersive 3D audio, in the sense of being able to virtualize sound sources at any position in space, and accurate audio localization, in terms of both direction and distance.”

“In addition to a “home theater” audio-visual system, there may be a “personal” system having a tablet-sized visual display with speakers built into the device, e.g. around the perimeter of the display. Alternatively, the personal device may be a hand-held smart phone. Headphones with appropriate spatialization would also be a means to deliver an immersive audio experience for all systems.”

Complementary to the CfP, MPEG also provided the encoder input format for MPEG-H 3D audio and a draft MPEG audio core experiment methodology for 3D audio work.

Publicly available MPEG output documents

The following documents shall be come available at <http://mpeg.chiariglione.org/> (note: some may have an editing period – YY/MM/DD). If you have difficulties to access one of these documents, please feel free to contact me.

- Study text of DIS of ISO/IEC 23000-13, Augmented Reality Application Format (13/01/25)
- Study text of DTR of ISO/IEC 23000-14, Augmented reality reference model (13/02/25)
- Text of ISO/IEC FDIS 23005-1 2nd edition Architecture (13/01/25)
- Text of ISO/IEC 2nd CD 23008-1 MPEG Media Transport (13/02/07)
- Text of ISO/IEC 23008-2:201x/PDAM1 Range Extensions (13/03/22)
- Text of ISO/IEC 23008-2:201x/PDAM2 Multiview Extensions (13/03/22)
- Call for Proposals on 3D Audio (13/01/25)
- Encoder Input Format for MPEG-H 3D Audio (13/02/08)
- Draft MPEG Audio CE methodology for 3D Audio work (13/01/25)
- Draft Requirements on MPEG User Descriptions (13/02/08)

- Draft Call for Proposals on MPEG User Descriptions (13/01/25)
- Draft Call for Proposals on Green MPEG (13/01/25)
- Context, Objectives, Use Cases and Requirements for Green MPEG (13/01/25)
- White Paper on State of the Art in compression and transmission of 3D Video (13/01/28)
- MPEG Awareness Event Flyer at 104th MPEG meeting in Incheon (13/02/28)

Interview with ACM Fellow and SIGMM Chair Prof Klara Nahrstedt



Prof. Dr. Klara Nahrstedt, SIGMM Chair

SIGMM Editor: “Why do societies such as ACM offer Fellows status to some of its members?”

Prof Klara Nahrstedt: The ACM society celebrates through its ACM Fellows Status Program the exceptional contributions of the leading members in the computing field. These individuals have helped to enlighten researchers, developers, practitioners and end-users of computing and information technology throughout the world. The new ACM Fellows join a distinguished list of colleagues to whom ACM and its members look for guidance and leadership in computing and information technology.

SIGMM Editor: “What is the significance for you as an individual research in becoming an ACM Fellow?”

Prof Klara Nahrstedt: Receiving the ACM Fellow Status represents a great honor for me due to the high

distinction of this award in the computing community.

The ACM Fellow award recognizes my own research in the area of “Quality of Service (QoS) management for distributed multimedia systems”, as well as the joint work in this area with my students and colleagues at my home institution, the University of Illinois, Urbana-Champaign, and other institutions, research labs, and companies with whom I have collaborated over the years. Furthermore, becoming an ACM Fellow allows me to continue and push new ideas of QoS in distributed multimedia systems in three societal domains, the trustworthy cyber-physical infrastructure for smart grid environments, the collaborative immersive spaces in tele-health-care, and robust mobile multimedia systems in airline-airplane maintenance ecosystem.

SIGMM Editor: “How is this recognition perceived by your research students, department, and University? “

Prof Klara Nahrstedt: My research students, department and university are delighted that I have received the ACM Fellow status since this type of award very much reflects the high quality of students that get admitted to our department and I work with, colleagues I interact with, and resources I get provided by the department and university.

SIGMM Editor: “You have been one of the important torch bearers of the SIGMM community. What does this recognition imply for the SIGMM Community?”

Prof Klara Nahrstedt: SIGMM community is a relatively young community, having only recently celebrated 20 years of its existence. However, as the multimedia community is maturing, it is important for our community to promote its outstanding researchers and assist them towards the ACM Fellow status. Furthermore, multimedia technology is becoming ubiquitous in all facets of our lives; hence it is of great importance that SIGMM leaders, especially its ACM Fellows, are at the table with other computing researchers to guide and drive future directions in computing and information technologies.

SIGMM Editor: “How will this recognition influence the SIGMM community?”

Prof Klara Nahrstedt: I hope that my ACM Fellow status recognition will influence the SIGMM community at least in three directions: (1) it will motivate young researchers in academia and industry to work towards high impact research accomplishments in multimedia area that will lead to the ACM Fellow status at the later stage of their careers, (2) it will impact female researchers to strive towards recognition of their work through the ACM Fellow Status, and (3) it will increase the distinguished group of ACM Fellows within the SIGMM, which again will be able to promote the next

generation of multimedia researchers to join the ACM Fellows ranks.

SIGMM Education Column

SIGMM Education Column of this issue highlights a new book, titled "Visual Information Retrieval using Java and LIRE," which gives an introduction to the fields of information retrieval and visual information retrieval and points out selected methods, as well as their use and implementation within Java and more specifically LIRE, a Java CBIR library. The book is authored by Dr. Mathias Lux, from Klagenfurt University, Austria, and Prof. Oge Marques, of Florida Atlantic University, and it is published in the Synthesis Lectures on Information Concepts, Retrieval, and Services by Morgan & Claypool.

The basic motivation for writing this book was the need for a fundamental course book that contained just the necessary knowledge to get students started with content-based image retrieval. The book is based on lectures given by the authors over the last years and has been designed to fulfill that need. It will also provide developers for content-based image solutions with a head start by explaining the most relevant concepts and practical requirements.

The book begins with a short introduction, followed by explanations of information retrieval and retrieval evaluation. Visual features are then explained, and practical problems and common solutions are outlined. Indexing strategies of visual features, including linear search, nearest neighbor search, hashing and bag of visual words, are discussed next, and the use of these strategies with LIRE is shown. Finally, LIRE is described in detail, to allow for employment of the library in various contexts and for extension of the functions provided.

There is also a companion website for the book (<http://www.lire-project.net>), which gives pointers to additional resources and will be updated with slides, figures, teaching materials and code samples.

Call for TOMCCAP Special Issue Proposals

ACM Transactions on Multimedia Computing, Communications and Applications (ACM – TOMCCAP)

Deadline for Proposal Submission: May, 1st 2013

Notification: June, 1st 2013

<http://tomccap.acm.org/>

ACM – TOMCCAP is one of the world's leading journals on multimedia. As in previous years we are planning to publish a special issue in 2014. Proposals are accepted until May, 1st 2013. Each special issue is the responsibility of guest editors. If you wish to guest edit a special issue you should prepare a proposal as outlined below, then send this via e-mail to EiC Ralf Steinmetz(steinmetz.eic@kom.tu-darmstadt.de) (<steinmetz.eic@kom.tu-darmstadt.de>)

Proposals should:

- Cover a current or emerging topic in the area of multimedia computing, communications and applications;
- Set out the importance of the special issue's topic in that area;
- Give a strategy for the recruitment of high quality papers;
- Indicate a draft time-scale in which the special issue could be produced (paper writing, reviewing, and submission of final copies to TOMCCAP), assuming the proposal is accepted.

As in the previous years, the special issue will be published as online-only issue in the ACM Digital Library. This gives the guest editors higher flexibility in the review process and the number of papers to be accepted, while yet ensuring a timely publication. A notification of acceptance for the proposals will be given until June, 1st 2013. Once a proposal is accepted we will contact you to discuss the further process.

For questions please contact:

Ralf Steinmetz – Editor in Chief (steinmetz.eic@kom.tu-darmstadt.de
(<steinmetz.eic@kom.tu-darmstadt.de>))
Sebastian Schmidt – Information Director
(TOMCCAP@kom.tu-darmstadt.de
(<TOMCCAP@kom.tu-darmstadt.de>))

If you have questions, please contact the TOMCCAP information director at TOMCCAP@kom.tu-darmstadt.de (<TOMCCAP@kom.tu-darmstadt.de>)

Further details can be found at <http://tomccap.acm.org/>

Call for Nominations: ACM TOMCCAP Nicolas D. Georganas Best Paper Award

The Editor-in-Chief of ACM TOMCCAP invites you to nominate candidates for the “ACM Transactions on Multimedia Computing, Communications and Applications Nicolas D. Georganas Best Paper Award”.

The award is given annually to the author(s) of an outstanding paper published in ACM TOMCCAP within the previous legal year from January 1 until December 31. The award carries a plaque as well as travel funds to the ACM MM conference where the awardee(s) will be honored.

Procedure

Nominations for the award must include the following:

- A statement describing the technical contributions of the nominated paper and a description of the significance of the paper. The statement should not exceed 500 words. No self-nomination is accepted.
- Two additional supporting statements by recognized experts in the field regarding the technical contribution of the paper and its significance to the respective field.

Only papers published in regular issues (no Special Issues) can be nominated.

Nominations will be reviewed by the Selection Committee and the winning paper will finally be voted by the TOMCCAP Editorial Board.

Deadline

Deadline for nominations of papers published in 2012 (Volume 8) is the 15th of June 2013.

Contact

Please send your nominations to the Editor-in-Chief at steinmetz.eic@kom.tu-darmstadt.de (<steinmetz.eic@kom.tu-darmstadt.de>)

Call for Nominations: SIGMM Technical Achievement Award

for Outstanding Technical Contributions to Multimedia Computing, Communications and Applications

Award Description

This award is presented every year to a researcher who has made significant and lasting contributions to multimedia computing, communication and applications. Outstanding technical contributions through research and practice are recognized. Towards this goal, contributions are considered from academia and industry that focus on major advances in multimedia including multimedia processing, multimedia content analysis, multimedia systems, multimedia network protocols and services, and multimedia applications and interfaces. The award recognizes members of the community for long-term technical accomplishments or those who have made a notable impact through a significant technical innovation. The selection committee focuses on candidates' contributions as judged by innovative ideas, influence in the community, and/or the technical/social impact resulting from their work. The award includes a \$1000 honorarium, an award certificate of recognition, and an invitation for the recipient to present a keynote talk at a current year's SIGMM-sponsored conference, the ACM International Conference on Multimedia (ACM Multimedia). A public citation for the award will be placed on the SIGMM website.

Funding

The award honorarium, the award certificate of recognition and travel expenses to the ACM International Conference on Multimedia is fully sponsored by the SIGMM budget.

Nomination Process

Nominations are solicited by **May 31, 2013** with decision made by July 30 2013, in time to allow the above recognition and award presentation at ACM Multimedia 2013.

Nominations for the award must include:

1. A statement summarizing the candidate's accomplishments, description of the significance of the work, and justification of the nomination (two pages maximum);
2. Curriculum Vitae of the nominee;
3. Three endorsement letters supporting the nomination including the significant contributions of the candidate. Each endorsement should be no longer than 500 words with clear specification of nominee contributions and impact on the multimedia field;
4. A concise statement (one sentence) of the achievement(s) for which the award is being given. This statement will appear on the award certificate and on the website.

The nomination rules are: The nominee can be any member of the scientific community.

1. The nominator must be a SIGMM member.
2. No self-nomination is allowed.
3. Nominations that do not result in an award will be valid for two further years. After three years a revised nomination can be resubmitted.
4. The SIGMM elected officers as well as members of the Awards Selection Committee are not eligible.

Please submit your nomination to the award committee by email.

Committee

- Larry Rowe (rowe@fxpal.com (<rowe@fxpal.com>))
- Tat-Seng Chua (chuats@comp.nus.edu.sg (<chuats@comp.nus.edu.sg>))
- Rainer Lienhart (rainer.lienhart@informatik.uni-augsburg.de (<rainer.lienhart@informatik.uni-augsburg.de>))

Previous Recipients

- **2012: Hong-Jiang Zhang** (pioneering contributions to and leadership in media computing including

content-based media analysis and retrieval, and their applications).

- **2011: Shi-Fu Chang** (for pioneering research and inspiring contributions in multimedia analysis and retrieval).
- **2010: Ramesh Jain** (for pioneering research and inspiring leadership that transformed multimedia information processing to enhance the quality of life and visionary leadership of the multimedia community).
- **2009: Lawrence A. Rowe** (for pioneering research in continuous media software systems and visionary leadership of the multimedia research community).
- **2008: Ralf Steinmetz** (for pioneering work in multimedia communications and the fundamentals of multimedia synchronization).

Call for Nominations: SIGMM Award for Outstanding PhD Thesis

in Multimedia Computing, Communications and Applications

Award Description

This award will be presented at most once per year to a researcher whose PhD thesis has the potential of very high impact in multimedia computing, communication and applications, or gives direct evidence of such impact. A selection committee will evaluate contributions towards advances in multimedia including multimedia processing, multimedia systems, multimedia network protocols and services, multimedia applications and interfaces. The award will recognize members of the SIGMM community and their research contributions in their PhD theses as well as the potential of impact of their PhD theses in multimedia area. The selection committee will focus on candidates' contributions as judged by innovative ideas and potential impact resulting from their PhD work.

The award includes a US\$500 honorarium, an award certificate of recognition, and an invitation for the recipient to receive the award at a current year's SIGMM-sponsored conference, the ACM International Conference on Multimedia (ACM Multimedia). A public citation for the award will be placed on the SIGMM website, in the SIGMM Records e-newsletter as well as in the ACM e-newsletter.

Funding

The award honorarium, the award plaque of recognition and travel expenses to the ACM International Conference on Multimedia will be fully sponsored by the SIGMM budget.

Nomination Applications

Nominations will be solicited by the 1st May 2013 with an award decision to be made by August 30. This timing will allow a recipient to prepare for an award presentation at ACM Multimedia in that Fall (October/November).

The initial nomination for a PhD thesis must relate to a dissertation deposited at the nominee's Academic Institution between January and December of the year previous to the nomination. As discussed below, *some dissertations may be held for up to three years by the selection committee for reconsideration*. If the original thesis is not in English, a full English translation must be provided with the submission. Nominations for the award must include:

1. PhD thesis (upload at: <https://cmt.research.microsoft.com/SIGMM2012/>)
2. A statement summarizing the candidate's PhD thesis contributions and potential impact, and justification of the nomination (two pages maximum);
3. Curriculum Vitae of the nominee
4. Three endorsement letters supporting the nomination including the significant PhD thesis contributions of the candidate. Each endorsement should be no longer than 500 words with clear specification of nominee PhD thesis contributions and potential impact on the multimedia field.
5. A concise statement (one sentence) of the PhD thesis contribution for which the award is being given. This statement will appear on the award certificate and on the website.

The nomination rules are:

1. The nominee can be any member of the scientific community.
2. The nominator must be a SIGMM member.
3. No self-nomination is allowed.

If a particular thesis is considered to be of exceptional merit but not selected for the award in a given year, the selection committee (at its sole discretion) may elect to retain the submission for consideration in at most two

following years. The candidate will be invited to resubmit his/her work in these years.

A thesis is considered to be outstanding if:

1. Theoretical contributions are significant and application to multimedia is demonstrated.
2. Applications to multimedia is outstanding, techniques are backed by solid theory with clear demonstration that algorithms can be applied in new domains - e.g., algorithms must be demonstrably scalable in application in terms of robustness, convergence and complexity.

The submission process of nominations will be preceded by the call for nominations. The call of nominations will be widely publicized by the SIGMM awards committee and by the SIGMM Executive Board at the different SIGMM venues, such as during the SIGMM premier ACM Multimedia conference (at the SIGMM Business Meeting) on the SIGMM web site, via SIGMM mailing list, and via SIGMM e-newsletter between September and December of the previous year.

Submission Process

- Register an account at <https://cmt.research.microsoft.com/SIGMM2012/> and upload one copy of the nominated PhD thesis. The nominee will receive a Paper ID after the submission.
- The nominator must then collate other materials detailed in the previous section and upload them as supplementary materials, **except the endorsement letters, which must be emailed separately as detailed below**.
- Contact your referees and ask them to send all endorsement letters to sigmmaward@gmail.com (<sigmmaward@gmail.com>) with the title: "PhD Thesis Award Endorsement Letter for [YourName]". The web administrator will acknowledge the receipt and the submission CMT website will reflect the status of uploaded documents and endorsement letters.

It is the responsibility of the nominator to follow the process and make sure documentation is complete. Thesis with incomplete documentation will be considered invalid.

Selection Committee

For the period 2013-2014, the award selection committee consists of:

- Prof. Kiyoo Aizawa (aizawa@hal.t.u-tokyo.ac.jp (<aizawa@hal.t.u-tokyo.ac.jp>)) from University of Tokyo, Japan

- Prof. Alan Hanjalic (A.Hanjalic@tudelf.nl (<A.Hanjalic@tudelf.nl>)) from TU Delf, Netherlands
- Prof. Baochun Li (bli@eecg.toronto.edu (<bli@eecg.toronto.edu>)) from University of Toronto, Canada.

SIGMM Elections

Dear SIGMM members:

This year we have ACM SIGMM elections. All SIGMM members are invited to cast their vote for the three SIGMM officers:

- SIGMM Chair
- SIGMM Vice Chair
- SIGMM Director of Conferences.

Our candidates are for Chair:

Dick C.A. Bulterman
Shih-Fu Chang

for Vice Chair:

Rainer Lienhart
Yong Rui

for Director of Conferences:

Susanne Boll
Nicu Sebe

You find all the information on the candidates as well as on ACM's SIG election policies and procedures on this website:

<http://www.acm.org/sigs/elections>

Call for Multimedia Grand Challenge Solutions

Overview

The Multimedia Grand Challenge presents a set of problems and issues from industry leaders, geared to engage the Multimedia research community in solving relevant, interesting and challenging questions about the industry's 3-5 year vision for multimedia.

The Multimedia Grand Challenge was first presented as part of ACM Multimedia 2009 and has established itself as a prestigious competition in the multimedia community. This year's conference will continue the tradition with by repeating previous challenges, and by introducing brand new challenges.

Challenges

NHK Where is beauty? Grand Challenge

Scene Evaluation based on Aesthetic Quality

Automatic understanding of viewer's impressions from image or video sequences is a very difficult task, but an interesting theme for study. Therefore, more and more researchers have investigated this theme recently. To achieve automatic understanding, various elemental features or techniques need to be used in a comprehensive manner, such as the balance of color or contrast, composition, audio, object recognition, and object motion. In addition, we might have to consider not only image features but also semantic features.

The task NHK sets is "Where is Beauty?", which aims at automatically recognizing beautiful scenes in a set of video sequences. The important point of this task is "how to evaluate beauty using an engineering approach", which is a challenging task involving human feelings. We will provide participants with approx. 1,000 clips of raw broadcast video footage, containing various categories such as creatures, landscape, and CGI. These video clips last about 1 min. Participants will have to evaluate the beautifulness of these videos automatically, and rank them in terms of beauty.

The proposed method will be evaluated on the basis of its originality and accuracy. We expect that participants will consider a diverse range of beauty, not only the balance of color but also composition, motion, audio, and other brand new features! The reliability and the diversity of the extracted beauty will be scored by using manually annotated data. In addition, if a short video composed of the highly ranked videos is submitted, it will be included in the evaluation.

More details

Technicolor – Rich Multimedia Retrieval from Input Videos Grand Challenge

Visual search that aims at retrieving copies of an image as well as information on a specific object, person or place in this image has progressed dramatically in the past few years. Thanks to modern techniques for large scale image description, indexing and matching, such an image-based information retrieval can be conducted either in a structured image database for a given topic (e.g., photos in a collection, paintings, book covers,

monuments) or in an unstructured image database which is weakly labeled (e.g., via user-input tags or surrounding texts, including captions).

This Grand Challenge aims at exploring tools to push this search paradigm forward by addressing the following question: how can we search unstructured multimedia databases based on video queries? This problem is already encountered in professional environments where large semi-structured multimedia assets, such as TV/radio archives or cultural archives, are operationally managed. In these cases, resorting to trained professionals such as archivists remains the rule, both to annotate part of the database beforehand and to conduct searches. Unfortunately, this workflow does not apply to large-scale search into wildly unstructured repositories accessible on-line.

The challenge is to retrieve and organize automatically relevant multimedia documents based on an input video. In a scenario where the input video features a news story for instance, can we retrieve other videos, articles and photos about the same news story? And, when the retrieved information is voluminous, how can these multimedia documents be linked, organized and summarized for easy reference, navigation and exploitation?

More details

Yahoo! – Large-scale Flickr-tag Image Classification Grand Challenge

Image classification is one of the fundamental problems of computer vision and multimedia research. With the proliferation of the Internet, the availability of cheap digital cameras, and the ubiquity of cell-phone cameras, the amount of accessible visual content has increased astronomically. Websites such as Flickr alone boast of over 5 billion images, not counting the many such websites and countless other images that are not published online. This explosion poses unique challenges for the classification of images.

Classification of images with a large number of classes and images has attracted several research efforts in recent years. The availability of datasets such as ImageNet, which boasts of over 14 million images and over 21 thousand classes, has motivated researchers to develop classification algorithms that can deal with large quantities of data. However, most of the effort has been dedicated to building systems that can scale up when the number of classes is large. In this challenge we are interested to learn classifiers when the number of images is large. There has been some recent

work that deals with thousands of images for training, however in this challenge we are looking at upwards of 250,000 images per class. What makes the challenge difficult is that the annotations are provided by users of Flickr (www.flickr.com), which might not be always accurate. Furthermore each class can be considered as a collection of sub-classes with varied visual properties.

More details

Huawei/3DLife – 3D human reconstruction and action recognition Grand Challenge

3D human reconstruction and action recognition from multiple active and passive sensors

This challenge calls for demonstrations of methods and technologies that support real-time or near real-time 3D reconstruction of moving humans from multiple calibrated and remotely located RGB cameras and/or consumer depth cameras. Additionally, this challenge also calls for methods for human gesture/movement recognition from multimodal data. The challenge targets mainly real-time applications, such as collaborative immersive environments and inter-personal communications over the Internet or other dedicated networking environments.

To this end, we provide two data sets to support investigation of various techniques in the fields of 3D signal processing, computer graphics and pattern recognition, and enable demonstrations of various relevant technical achievements.

Consider multiple distant users, which are captured in real-time by their own visual capturing equipment, ranging from a single Kinect (simple user) to multiple Kinects and/or high-definition cameras (advanced users), as well as non-visual sensors, such as Wearable Inertial Measurement Units (WIMUs) and multiple microphones. The captured data is either processed at the capture site to produce 3D reconstructions of users or directly coded and transmitted, enabling rendering of multiple users in a shared environment, where users can “meet” and “interact” with each other or the virtual environment via a set of gestures/movements.

More details

MediaMixer/VideoLectures.NET – Temporal Segmentation and Annotation Grand Challenge

Semantic VideoLectures.NET segmentation service

VideoLectures.NET mostly hosts lectures 1 to 1.5h long linked with slides and enriched with metadata and additional textual contents. With automatic temporal segmentation and annotation of the video we would gain on efficiency of our video search engine and be able to provide users with the ability to search for sections within a video, as well as recommend similar content. This would mean that the challenge participants develop tools for automatic segmentation of videos that could then be implemented in VideoLectures.NET.

More details

Microsoft: MSR – Bing Image Retrieval Grand Challenge

The Second Microsoft Research (MSR)-Bing challenge (the “Challenge”) is organized into a dual track format, one scientific and the other industrial. The two tracks share exactly the same task and timelines but independent submission and ranking processes.

For the scientific track, we will follow exactly what MM13 GC outlines. The papers will be submitted to MM13, and go through the review process. The accepted ones will be presented at the conference. At the conference, the authors of the accepted papers will be requested to introduce their solutions, give a quick demo, and take questions from the judges and the audience. Winners will be selected for Multimedia Grand Challenge Award based on their presentation.

The industrial track of the Challenge will be conducted over the internet through a website maintained by Microsoft. Contestants participating in the industrial track are encouraged to take advantage of the recent advancements in the cloud computing infrastructure and public datasets and must submit their entries in the form of publicly accessible REST-based web services (further specified below). Each entry will be evaluated against a test set created by Bing on queries received at Bing Image Search in the EN-US market. Due to the global nature of the Web the queries are not necessarily limited to the English language used in the United States.

More details

Submissions

Submissions should:

- Significantly address one of the challenges posted on the web site.
- Depict working, presentable systems or demos, using the grand challenge dataset where provided.
- Describe why the system presents a novel and interesting solution.

Submission Guidelines

The submissions (max 4 pages) should be formatted according to ACM Multimedia formatting guidelines. The submissions should be formatted according to ACM Multimedia formatting guidelines. Multimedia Grand Challenge reviewing is Double-blind so authors shouldn't reveal their identity in the paper. The finalists will be selected by a committee consisting of academia and industry representatives, based on novelty, presentation, scientific interest of the approach and, for the evaluation-based challenges, on the performance against the task.

Finalist submissions will be published in the conference proceedings, and will be presented in a special event during the ACM Multimedia 2013 conference in Barcelona, Spain. At the conference, finalists will be requested to introduce their solutions, give a quick demo, and take questions from the judges and the audience.

Winners will be selected for Multimedia Grand Challenge awards based on their presentation.

Important Dates

Challenges Announced:	February 25, 2013
Paper Submission Deadline:	July 1, 2013
Notification of Acceptance:	July 29, 2013
Camera-Ready Submission Deadline:	August 12, 2013

Contact

For any questions regarding the Grand Challenges please email the Multimedia Grand Challenge Solutions Chairs:

Neil O'Hare (Yahoo!, Spain)
Yiannis Kompatsiaris (CERTH, Greece)

Open Source Column: Dynamic Adaptive Streaming over HTTP Toolset

Introduction

Multimedia content is nowadays omnipresent thanks to technological advancements in the last decades. A major driver of today's networks are content providers like Netflix and YouTube, which do not deploy their own streaming architecture but provide their service over-the-top (OTT). Interestingly, this streaming approach performs well and adopts the Hypertext Transfer Protocol (HTTP), which has been initially designed for best-effort file transfer and not for real-time multimedia streaming. The assumption of former video streaming research that streaming on top of HTTP/TCP will not work smoothly due to its retransmission delay and throughput variations, has apparently be overcome as supported by [1].

Streaming on top of HTTP, which is currently mainly deployed in the form of progressive download, has several other advantages. The infrastructure deployed for traditional HTTP-based services (e.g., Web sites) can be exploited also for real-time multimedia streaming. Typical problems of real-time multimedia streaming like NAT or firewall traversal do not apply for HTTP streaming. Nevertheless, there are certain disadvantages, such as fluctuating bandwidth conditions, that can not be handled with the progressive download approach, which is a major drawback especially for mobile networks where the bandwidth variations are tremendous.

One of the first solutions to overcome the problem of varying bandwidth conditions has been specified within 3GPP as Adaptive HTTP Streaming (AHS) [2]. The basic idea is to encode the media file/stream into different versions (e.g., bitrate, resolution) and chop each version into segments of the same length (e.g., two seconds). The segments are provided on an ordinary Web server and can be downloaded through HTTP GET requests. The adaptation to the bitrate or resolution is done on the client-side for each segment, e.g., the client can switch to a higher bitrate – if bandwidth permits – on a per segment basis. This has several advantages because the client knows best its capabilities, received throughput, and the context of the user. In order to describe the temporal and structural relationships between segments, AHS introduced the

so-called Media Presentation Description (MPD). The MPD is a XML document that associates an uniform resource locators (URL) to the different qualities of the media content and the individual segments of each quality. This structure provides the binding of the segments to the bitrate (resolution, etc.) among others (e.g., start time, duration of segments). As a consequence each client will first request the MPD that contains the temporal and structural information for the media content and based on that information it will request the individual segments that fit best for its requirements.

Additionally, the industry has deployed several proprietary solutions, e.g., Microsoft Smooth Streaming [3], Apple HTTP Live Streaming [4] and Adobe Dynamic HTTP Streaming [5], which more or less adopt the same approach.

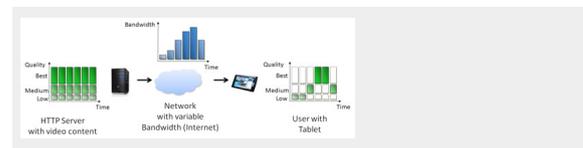


Figure 1: Concept of Dynamic Adaptive Streaming over HTTP.

Recently, ISO/IEC MPEG has ratified Dynamic Adaptive Streaming over HTTP (DASH) [6] an international standard that should enable interoperability among proprietary solutions. The concept of DASH is depicted in Figure 1. The Institute of Information Technology (ITEC) and, in particular, the Multimedia Communication Research Group of the Alpen-Adria-Universität Klagenfurt has participated and contributed from the beginning to this standard. During the standardization process a lot of research tools have been developed for evaluation purposes and scientific contributions including several publications. These tools are provided as open source for the community and are available at [7].

Open Source Tools Suite

Our open source tool suite consists of several components. On the client-side we provide libdash [8] and the DASH plugin for the VLC media player (also available on Android). Additionally, our suite also includes a JavaScript-based client that utilizes the HTML5 media source extensions of the Google Chrome browser to enable DASH playback.

Furthermore, we provide several server-side tools such as our DASH dataset, consisting of different movie sequences available in different segment lengths as well as bitrates and resolutions. Additionally, we provide a distributed dataset mirrored at different locations across

Europe. Our datasets have been encoded using our DASHEncoder, which is a wrapper tool for x264 and MP4Box.

Finally, a DASH online MPD validation service and a DASH implementation over CCN completes our open source tool suite.

libdash

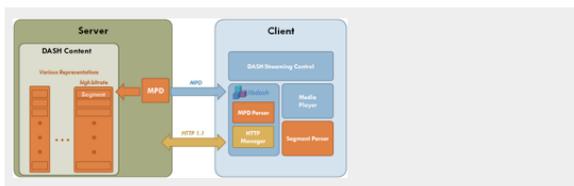


Figure 2: Client-Server DASH Architecture with libdash.

The general architecture of DASH is depicted in Figure 2, where orange represents standardized parts. libdash comprises the MPD parsing and HTTP part. The library provides interfaces for the DASH Streaming Control and the Media Player to access MPDs and downloadable media segments. The download order of such media segments will not be handled by the library. This is left to the DASH Streaming Control, which is an own component in this architecture but it could also be included in the Media Player.

In a typical deployment, a DASH server provides segments in several bitrates and resolutions. The client initially receives the MPD through libdash which provides a convenient object-oriented interface to that MPD. Based on that information the client can download individual media segments through libdash at any point in time. Varying bandwidth conditions can be handled by switching to the corresponding quality level at segment boundaries in order to provide a smooth streaming experience. This adaptation is not part of libdash and the DASH standard and will be left to the application which is using libdash.

DASH-JS

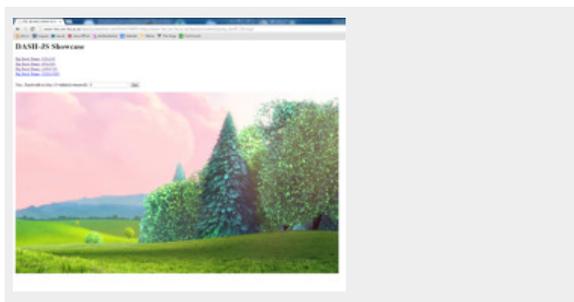


Figure 3: Screenshot of DASH-JS.

DASH-JS seamlessly integrates DASH into the Web using the HTML5 video element. A screenshot is shown in Figure 3. It is based on JavaScript and uses the Media Source API of Google's Chrome browser to present a flexible and potentially browser independent DASH player. DASH-JS is currently using WebM-based media segments and segments based on the ISO Base Media File Format.

DASHEncoder

DASHEncoder is a content generation tool – on top of the open source encoding tool x264 and GPAC's MP4Box – for DASH video-on-demand content. Using DASHEncoder, the user does not need to encode and multiplex separately each quality level of the final DASH content. Figure 4 depicts the workflow of the DASHEncoder. It generates the desired representations (quality/bitrate levels), fragmented MP4 files, and MPD file based on a given configuration file or by command line parameters.

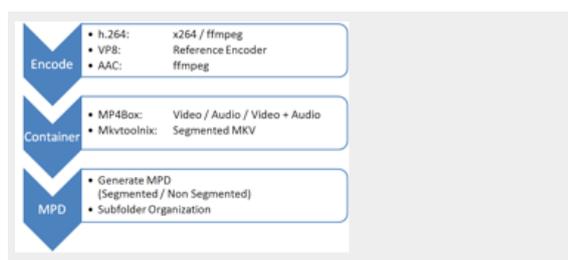


Figure 4: High-level structure of DASHEncoder.

The set of configuration parameters comprises a wide range of possibilities. For example, DASHEncoder supports different segment sizes, bitrates, resolutions, encoding settings, URLs, etc. The modular implementation of DASHEncoder enables the batch processing of multiple encodings which are finally reassembled within a predefined directory structure represented by single MPD. DASHEncoder is available open source on our Web site as well as on Github, with the aim that other developers will join this project. The content generated with DASHEncoder is compatible with our playback tools.

Datasets



Figure 5: DASH Dataset.

Our DASH dataset comprises multiple full movie length sequences from different genres – animation, sport and movie (c.f. Figure 5) – and is located at our Web site. The DASH dataset is encoded and multiplexed using different segment sizes inspired by commercial products ranging from 2 seconds (i.e., Microsoft Smooth Streaming) to 10 seconds per fragment (i.e., Apple HTTP Streaming) and beyond. In particular, each sequence of the dataset is provided with segments sizes of 1, 2, 4, 6, 10, and 15 seconds. Additionally, we also offer a non-segmented version of the videos and the corresponding MPD for the movies of the animation genre, which allows for byte-range requests. The provided MPDs of the dataset are compatible with the current implementation of the DASH VLC Plugin, libdash, and DASH-JS.

Furthermore, we provide a distributed DASH (D-DASH) dataset which is, at the time of writing, replicated on five sites within Europe, i.e., Klagenfurt, Paris, Prague, Torino, and Crete. This allows for a real-world evaluation of DASH clients that perform bitstream switching between multiple sites, e.g., this could be useful as a simulation of the switching between multiple Content Distribution Networks (CDNs).

DASH Online MPD Validation Service

The DASH online MPD validation service implements the conformance software of MPEG-DASH and enables a Web-based validation of MPDs based on a file, URI, and text. As the MPD is based on XML schema, it is also possible to use an external XML schema file for the validation.

DASH over CCN

Finally, the Dynamic Adaptive Streaming over Content Centric Networks (DASC aka DASH over CCN) implements DASH utilizing a CCN naming scheme to identify content segments in a CCN network. Therefore, the CCN concept from Jacobson et al. and the CCNx implementation (www.ccnx.org) of PARC is used. In particular, video segments formatted according to MPEG-DASH are available in different quality levels but instead of HTTP, CCN is used for referencing and delivery.

Conclusion

Our open source tool suite is available to the community with the aim to provide a common ground for research efforts in the area of adaptive media streaming in order

to make results comparable with each other. Everyone is invited to join this activity – get involved in and excited about DASH.

Acknowledgments

This work was supported in part by the EC in the context of the ALICANTE (FP7-ICT-248652) and SocialSensor (FP7-ICT-287975) projects and partly performed in the Lakeside Labs research cluster at AAU.

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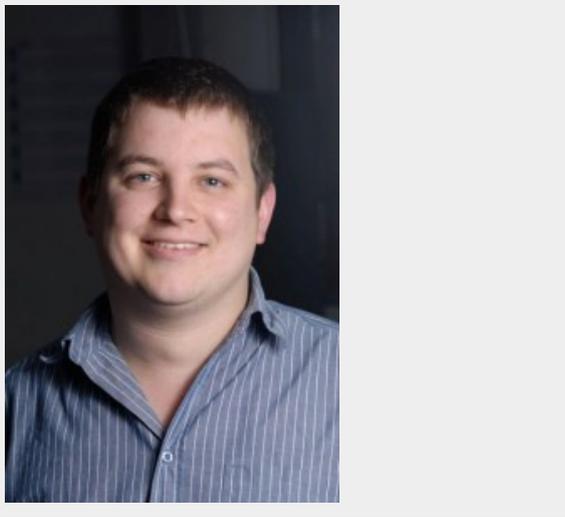
PhD Thesis Summaries

John Gilmore

A State Management and Persistency Architecture for Peer-to-Peer Massively Multi-user Virtual Environments

Supervisor(s) and Committee member(s): Herman Arnold Engelbrecht (thesis supervisor)

URL: <http://hdl.handle.net/10019.1/80268>



Recently, there has been significant research focus on Peer-to-Peer (P2P) Massively Multi-user Virtual Environments (MMVEs). A number of architectures have been presented in the literature to implement the P2P approach. One aspect that has not received sufficient attention in these architectures is state management and state persistency in P2P MMVEs. This work presents and simulates a novel state management and persistency architecture, called Pithos.

In order to design the architecture, an investigation is performed into state consistency architectures, into which the state management and persistency architecture should fit. A novel generic state consistency model is proposed that encapsulated all state consistency models reviewed. The requirements for state management and persistency architectures, identified during the review of state consistency models, are used to review state management and persistency architectures currently receiving research attention.

Identifying some deficiencies present in current designs, such as lack of fairness, responsiveness and scalability, a novel state management and persistency architecture, called Pithos, is designed. Pithos is a reliable, responsive, secure, fair and scalable distributed storage system, ideally suited to P2P MMVEs. Pithos is implemented in Oversim, which runs on the Omnet++ network simulator. An evaluation of Pithos is performed to verify that it satisfies the identified requirements.

It is found that the reliability of Pithos depends heavily on object lifetimes. If an object lives longer on average, retrieval requests are more reliable. An investigation is performed into the factors influencing object lifetime. A novel Markov chain model is proposed which allows for the prediction of objects lifetimes in any finite sized

network, for a given amount of redundancy, node lifetime characteristics and object repair rate.

MIH Media Lab

URL: <http://www.ml.sun.ac.za>

The MIH Media Lab at Stellenbosch University was founded with the purpose to promote research in “new media” technology in South Africa. In close partnership with an international industry partner, the MIH Media Lab aims to participate in research on next-generation technologies that will influence the ways in which humans interact with computers, the Web and other forms of electronic media. Current research projects include Gaming, Next Generation Internet, Conditional Access, Media Distribution and Augmented Reality.

Paul B. Beskow

Parallel programming models and run-time system support for interactive multimedia applications

Supervisor(s) and Committee member(s): Pål Halvorsen (supervisor), Carsten Griwodz (supervisor), Sheng-Wei (Kuan-Ta) Chen (opponent), Mei Wen (opponent)
URL: <http://heim.ifi.uio.no/~paalh/students/PaulBeskow-phd.pdf>



The computational demands of interactive multimedia applications are steadily increasing as consumers call for progressively more complex and intelligent multimedia services. New multi-core hardware architectures provide the required resources, but writing parallel, distributed applications remains a labor-intensive task compared to their sequential counterpart. For this reason a number of parallel programming models, tools and techniques exist to alleviate the cognitive load placed on the developer, where a number of these solutions allow a developer to think sequentially, yet benefit from parallel and distributed execution.

An inherent limitation in a number of these existing solutions is their inability to express arbitrarily complex workloads. The dependency graphs of these approaches, which express the relationship between computation and communication as vertices and edges, are often limited to directed acyclic graphs or even pre-determined stages. Furthermore, these existing solutions are frequently only capable of expressing a subset of the available parallelization domains. This effectively limits these solutions applicability to video encoding and other multimedia algorithms that depend on iterative execution and are capable of expressing a number of forms of parallelism.

Through the development of Ginnungagap and evaluation of Nornir, and related work, we have extracted concepts for the formulation of a new high-level programming model and subsequent run-time system, called P2G, which is capable of supporting the emerging domain of interactive multimedia applications. With P2G we improve on existing tools and techniques with the support of arbitrarily complex dependency graphs with cycles, branches and deadlines, and provide support for data, task, pipeline and nested parallelism. This is achieved in P2G through the definition a high-level programming model, implemented through a novel kernel language that is designed to minimize the development effort otherwise placed on the developer by automating key components for parallelization and distribution, such as partitioning, scheduling, agglomeration and synchronization. To demonstrate the feasibility of our solution, we have implemented a proof-of-concept run-time system that demonstrates the applicability and scalability of the designed solution.

Media Performance Group

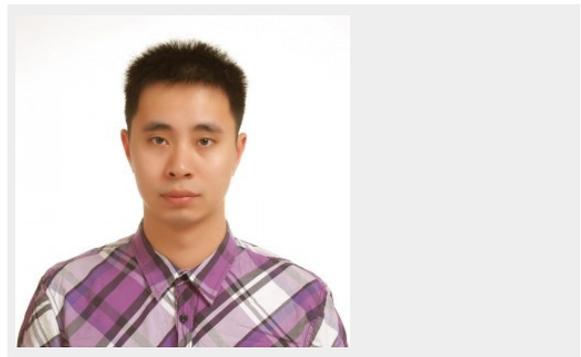
URL: <http://simula.no/department/media>

The Media Performance Group (MPG) addresses resource utilization and performance challenges to support a wide range of interactive multimedia services to the large user masses in the Internet. The goals are to reduce the costs, increase the number of users and optimize the perceived service quality. MPG's activities branch into several areas of multimedia systems to maintain and improve our ability to evaluate the performance of complete multimedia systems. This goal ties research branches together that are as diverse as multicore programming and user perception. Any level of a system may constitute a performance bottleneck, and the critical bottlenecks are known to move from component to component as the state of the art develops. Therefore, MPG's research keeps a global scope, while its research activities target the critical performance question.

Zhijie Shen

Large-scale Sensor-rich Video Management and Delivery

Supervisor(s) and Committee member(s): Roger Zimmermann (supervisor), Wei-Tsang Ooi (examiner), Mun-Choon Chan (examiner), Pål Halvorsen (examiner)



Zhijie Shen

In recent years, people have become accustomed to sharing and watching videos on the Internet. Particularly, the rapid advance in the technology of mobile devices has attracted users to produce and consume videos on the newly booming platform. With the technological innovation, a new life cycle of a video has reformed where people capture a video on their smartphones, upload it to some place on the Internet and make it available to the public; others discover the video in some way, download and watch it on smartphones as well as traditional platforms. Within the new life cycle, a number of hardware and software problems arise.

This thesis focuses on the problems raised during the second half of the aforementioned video life cycle and caused by the new requirements and constraints, that is, the large volume of videos and the big audience size. Specifically, the second half of the video life cycle (or the process of accessing Internet videos) can be further divided into two steps: (1) finding the desired video clip and then (2) downloading and watching it in real-time. The constraint of the large volume of videos complicates the first step, while it together with the constraint of the big audience size makes the second step difficult as well. Unfortunately, the traditional solutions that deal with small video corpora and small-scale audience are no longer applicable under the new conditions. Therefore, this thesis investigates and proposes some start-of-the-art techniques that can be applied to the

two steps to improve people's experience of accessing Internet videos.

During the first step, to search the desired videos, people tend to use the traditional textual input (or keywords), since textual annotation (or tagging) has demonstrated its capability of making videos searchable. Manual tagging is so laborious and often inaccurate that researchers proposed to automatically tag videos by analyzing their content. However, while the signal-level features of videos can easily be extracted from the content, high-level semantics are shown to be difficult to acquire for achieving sound accuracy. Recently, context of videos has been introduced to supplement high-level video semantics detection. Being aware of its promising effect, this thesis investigates a rich-context method, where a video is enriched with multiple dimensions of sensor information. Based on the sensor-rich setup, a data-driven approach for automating the tag generation process by exploiting the geo-spatial properties of videos is proposed. Importantly, without conducting any pixel-wise computations, the proposed approach is quite efficient and able to cope with big video corpora. Then, the thesis further discusses how to make use of the crowdsourced information from online multimedia websites to improve the geo-referenced data source, which significantly influences the quality of tags.

For the second step, after the desired videos are found, the traditional paradigm to deliver them to users is client-server, where the content publisher is responsible for disseminating videos to each individual user. Hence the bandwidth usage on the content publisher side grows linearly with the audience size. Given a huge audience, this paradigm may exhaust the bandwidth on the publisher side. In contrast, P2P networks have demonstrated to be a scalable paradigm by shifting the video delivery workload to users. Nevertheless, in recent years, P2P networks have generated a huge amount of far-reaching Internet traffic, which may result in monetary cost for Internet service providers (ISPs), network congestion and decrease of video quality. Consequently, it is worthwhile to study how to localize the traffic caused by P2P video streaming with streaming quality preserved. In this thesis, first, a real-world P2P streaming application has been measured to understand the peer distribution over networks, confirming the opportunity of localizing traffic. Next, the optimal solution of ISP-scale traffic locality is derived, and according to the solution, a number of modifications that are compatible with current P2P streaming architectures have been proposed. Nevertheless, it is found that traffic inefficiency is not just restricted to the scale of ISPs. Therefore, the solution is further extended to the scenarios of LAN-scale traffic locality and mobile wireless networks for generalization.

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Job Opportunities

Assistant Professor Interaction Technology

Job description

The cluster Interaction Technology of the Department of Information and Computing Sciences is recruiting an Assistant Professor. As prospective candidate you have expertise and experience in scientific research and education in relevant areas of computer science and information science. The research lies in the area of technologies for interaction between different media, virtual worlds, users, and their environment. The teaching tasks lie primarily in the bachelor studies Computer Science, and Information Science, and the master program Game & Media Technology. It is expected that the Assistant Professor will develop an independent line of research within the field of

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Editor-in-Chief: Ralf Steinmetz

interaction technology in cooperation with the other members of the cluster Interaction Technology.

This cluster researches new techniques for engaging interaction between users and various forms of media, such as images, movies, sounds, music, virtual characters, as well as augmented and completely virtual worlds. For this, various modalities, such as movement, touch, sound, brain signals, and other forms of bio-signals are investigated. We focus on the design, development, analysis and evaluation of new concepts, models and algorithms for innovative interaction. We take human aspects such as validation, efficiency, efficacy, communication, perception, cognition and emotion into account.

The work tasks for this position include:

- Performing scientific research in the field of interaction technology.
- Acquiring research funding and supervising PhD students.
- Developing and teaching courses, especially in Computer Science, Information Science, and Game & Media Technology.
- Supervising student projects, internships, and Master theses.
- Taking care of dissemination and valorization in the domain of serious gaming.
- Performing organizational activities within the cluster, department or faculty.

Qualifications

We are looking for candidates with a PhD in a relevant area. Experience in academic education within a university setting is desired. The candidate shall have published on relevant areas in international conferences and journals. Well-developed teaching skills and command of English in speaking and writing are a requirement. Candidates who prefer part-time employment are also invited to apply.

Offer

We offer an attractive position in a dynamic environment. The appointment is for three to five years. The position is full-time, but part-time employment is possible. The salary is between € 2890 (scale 10) and € 5,020 (scale 12) gross per month for a full-time appointment depending on education and experience. Additionally, excellent secondary benefits are provided, such as 8% holiday allowance and 8.3% end of year bonus. We offer a pension scheme, partially paid parental leave and flexible working conditions. For more

information see the terms of employment: <http://goo.gl/nMy83>.

About the organization

The Department of Computer Science (see <http://www.cs.uu.nl>) is nationally and internationally renowned for its research in computer science and information science. The research of the department is grouped into four clusters: Software Systems, Artificial Intelligence, Virtual Worlds, and Interaction Technology. Its research focus is on Game Technology, one of the four research focus areas of the Faculty of Science. Both the Department and the Faculty strive to strengthen the fundamental research in computer science and information science with applications in gaming technology and expand in the domain of interaction technology.

The Department offers bachelor programs in computer science and information science, and four English-language research master-programs including Game & Media Technology. High enrollment figures and good student ratings indicate the success of our educational programs.

Additional information

For more information please contact Prof. dr Remco Veltkamp at tel. +31.30.253.4091, or email R.C.Veltkamp@uu.nl.

Apply

Your application must contain a motivation letter, your CV with publication list, teaching and research statement, and contact details of at least two references. You can respond via the link: <http://goo.gl/4pG11>.

The deadline for applications is 1 May 2013.

Employer: Utrecht University
Expiration date: Wednesday, May 1, 2013
More information date: <http://www.cs.uu.nl/vacatures/en/569055.html>

FXPAL Intern position for Summer 2013

FXPAL is developing services and applications for a media wall in a conference/lecture hall. Two projectors are connected to an RGB Spectrum MediaWall processor that produces a display with multiple windows presenting output from different hardware sources. Services will include support for displaying and managing output from different sources through various technologies (e.g., HDMI cables, AppleTV/

Calls for Contribution

WiDi wireless connections, screen casting, etc.). The primary application will be to support multiple-window presentations composed of conventional presentation slides, videos, and live demos.

We are seeking an intern who would like to work on the software for these services and applications. You should be a graduate student in a computer science program with distributed systems, operating systems, and/or networking experience. Programming will be done in a variety of languages including C/C++, Java, and scripting languages.

The intern will work on one of the following problems and have an opportunity to publish a paper describing the work:

1. "Applications in the Cloud" – design and implement the infrastructure and services required to launch and manage applications in a VM running on a cloud and bind output to one or more display/windows and input to one or more input devices (e.g., keyboard/mouse, touchpad, etc.). The services will include managing a collection of hardware and software resources (e.g., apps, file systems, etc.) and saving and restoring a context composed of many applications.

2. "Presentation Wall User Interface" – design and implement a tablet/phone UI to control content on the media wall. The interface will use a "world-in-miniature" abstraction to setup/save/restore a context, invoke dynamic media wall operations, and support infrastructure for common presentation abstractions (e.g., outlines, videos, slides, live demos, multiple speakers, etc.).

3. "Open Architecture Media Wall System" – replace the RGB Spectrum custom-designed hardware with commodity hardware (e.g., PC server with NVidia graphics card and input/output cards) and software to implement the media wall.

We are seeking an intern who would like to work on one of these projects. You should be a graduate student in a computer science program with distributed systems, operating systems, and/or networking experience. Programming will be done in a variety of languages including C/C++, Java, and scripting languages. Advanced undergraduates with the required background are also welcomed to apply.

FXPAL is an industrial research lab with multimedia, HCI, and IT systems expertise. Interns are paid for 12 weeks and include a lump sum payment for relocation.

Students from outside the U.S. are welcome to apply.

Submit your resume and contact information for two references to fxpalresumes@fxpal.com

(<fxpalresumes@fxpal.com>). Identify your application as being for the Media Wall Services and Applications Intern Position.

FXPAL is an Equal Opportunity Employer. We value diversity in the work place.

Employer: FXPAL
Expiration date: Friday, May 31, 2013
More information date: <http://www.fxpal.com/>

Calls for Contribution

CFPs: Sponsored by ACM SIGMM

ACM MM Artworks

ACM Multimedia Artworks

Submission deadline: 15. May 2013
Location: Barcelona, Spain
Dates: 21. October 2013 -25. October 2013
More information: <http://acmmm13.org/submissions/call-for-artworks/>
Sponsored by ACM SIGMM

ACM Multimedia 2013 will host the 10th edition of the Interactive Arts Programme. The associated Multimedia Art exhibition will showcase digital arts installations including mixed-reality art, game-based art, enhanced performances, sound-based installations, tangible interfaces, and those featuring mobile and social media. The exhibition will run throughout the conference with an ... Read more →

ACM MM Brave New Ideas

ACM Multimedia Brave New Ideas

Submission deadline: 26. April 2013
Location: Barcelona, Spain
Dates: 21. October 2013 -25. October 2013
More information: <http://acmmm13.org/submissions/call-for-brave-new-idea-papers/>
Sponsored by ACM SIGMM

Brave New Ideas should address long term research challenges, point to new research directions, or provide new insights or brave perspectives that pave the way to innovation. We thus seek contributions that explore innovative and paradigm shifts in conventional theory and practice of multimedia techniques and applications. We also seek ... Read more →

ACM MM Demos

ACM Multimedia Technical Demos

Submission deadline: 21. April 2013
Location: Barcelona, Spain
Dates: 21. October 2013 -25. October 2013
More information: <http://acmmm13.org/submissions/call-for-technical-demos/>
Sponsored by ACM SIGMM

As in previous years, ACM Multimedia will provide demonstration sessions. Demos are intended as real, practical, and interactive proof of the presenters' research ideas and scientific or engineering contributions, with the goal of providing multimedia researchers and practitioners with the opportunity to discuss working multimedia systems, applications, prototypes, or proof-of-concepts. ... Read more →

ACM MM Open Source

ACM Multimedia Systems Open Source Software Competition

Submission deadline: 13. May 2013
Location: Barcelona, Spain
Dates: 21. October 2013 -25. October 2013
More information: <http://acmmm13.org/submissions/call-for-the-open-source-software-competition/>
Sponsored by ACM SIGMM

The ACM Multimedia Open-Source Software Competition celebrates the invaluable contribution of researchers and software developers who advance the field by providing the community with implementations of codecs, middleware, frameworks, toolkits, libraries, applications, and other multimedia software. This year will be the sixth year in running the competition as part of ... Read more →

ACM MM Tutorials

ACM Multimedia Tutorials

Submission deadline: 08. April 2013
Location: Barcelona, Spain
Dates: 21. October 2013 -25. October 2013
More information: <http://acmmm13.org/submissions/call-for-tutorials/>
Sponsored by ACM SIGMM

ACM Multimedia 2013 Tutorials will address the state-of-the-art research and developments regarding all aspects of multimedia, and will be of interest to the entire multimedia community, from novices in the world of multimedia to the most seasoned researchers, from

people working in academia to industry professionals. Proposals are solicited for ... Read more →

ACM MM Videos

ACM Multimedia Video Spotlights

Submission deadline: 20. August 2013
Location: Barcelona, Spain
Dates: 21. October 2013 -25. October 2013
More information: <http://acmmm13.org/submissions/call-for-video-spotlights/>
Sponsored by ACM SIGMM

ACM MM 2013 authors are invited to submit videos for display on screens around the conference centre. This offers all attendees an opportunity to become aware of your paper, and thus to be attracted to attend your poster or talk. The video collection will also be published online on the ... Read more →

ARTEMIS

International Workshop on Analysis and Retrieval of Tracked Events and Motion in Imagery Streams

Submission deadline: 05. June 2013
Location: Barcelona, Spain
Dates: 21. October 2013 -21. October 2013
More information: <http://acmmm13.org/program/workshops>
Sponsored by ACM SIGMM and IEEE

Cognitive video supervision and event analysis in video sequences is a critical task in many multimedia applications. Methods, tools and algorithms that aim to detect and recognize high level concepts and their respective spatio-temporal and causal relations in order to identify semantic video activities, actions and procedures have been in ... Read more →

AWMA

Audio and Multimedia Methods for Large-Scale Video Analysis

Submission deadline: 01. July 2013
Location: Barcelona, Spain
Dates: 21. October 2013 -21. October 2013
More information: <http://amva2013.icsi.berkeley.edu/amva2013/CFP.html>
Sponsored by ACM SIGMM

Everyday, thousands of videos are uploaded into the web creating an ever-growing demand for methods to make them easier to retrieve, search, and index.

While visual information is a very important part of a video, acoustic information often complements it. This is especially true for the analysis of consumer-produced, unconstrained ... Read more →

CEA

Workshop on Multimedia for Cooking and Eating Activities

Submission deadline: 03. June 2013
Location: Barcelona, Spain
Dates: 21. October 2013 -21. October 2013
More information: <http://www.mm.media.kyoto-u.ac.jp/CEA2013/index.html>
Sponsored by ACM SIGMM

Since people cook by manipulating foods, watching their conditions, listening to the sound, smelling the meal, and tasting it in the end, cooking support system also requires such multimedia sensing capability. Thanks to modern technology, the basic environment in a kitchen is becoming rich. Recently, home appliances such as a ... Read more →

CrowdMM

International Workshop on Crowdsourcing for Multimedia

Submission deadline: 28. June 2013
Location: Barcelona, Spain
Dates: 22. October 2013 -22. October 2013
More information: <http://crowdmm.org/index.html>
Sponsored by ACM SIGMM

CrowdMM 2013 is the sequel to the highly successful inaugural CrowdMM 2012 workshop (See the workshop report, program, photos, and tweets here). The CrowdMM 2013 workshop will continue to foster close interactions among researchers interested in crowdsourcing methodologies and its application towards solving multimedia research challenges.

HBU

International Workshop on Behavior Understanding

Submission deadline: 28. June 2013
Location: Barcelona, Spain
Dates: 22. October 2013 -22. October 2013
More information: <http://www.cmpe.boun.edu.tr/hbu/2013/>
Sponsored by ACM SIGMM

With advances in pattern recognition and multimedia computing, it became possible to analyze human

behavior via multimodal sensors, at different time-scales and at different levels of interaction and interpretation. This ability opens up enormous possibilities for multimedia and multimodal interaction, with a potential of endowing the computers with a capacity ... Read more →

IMMERSIVEME

Immersive Media Experiences

Submission deadline: 29. June 2013
Location: Barcelona, Spain
Dates: 22. October 2013 -22. October 2013
More information: <http://immersiveme2013.di.fc.ul.pt>
Sponsored by ACM SIGMM

Immersive media has the potential for strong impact on users' emotions, their sense of presence and engagement, and increasingly, users are enjoying and technology is supporting their involvement by capturing, producing, sharing and accessing information from their perspectives and experiences, over the Internet, in social media, and through video on ... Read more →

IMMPD

International Workshop on Interactive Multimedia on Mobile and Portable Devices

Submission deadline: 30. June 2013
Location: Barcelona, Spain
Dates: 22. October 2013 -22. October 2013
More information: <http://lshao.staff.shef.ac.uk/IMMPD2013.htm>
Sponsored by ACM SIGMM

Considering that mobile and portable devices are usually supplied with multiple sensors (e.g., camera and microphone), how to employ multimodal information for interaction has recently received much attention in both academia and industry. But interactive multimedia is still an under-explored field. Many challenges exist when moving to multimodal interaction: for ... Read more →

IWSAM

International Workshop on Socially-Aware Multimedia

Submission deadline: 29. June 2013
Location: Barcelona, Spain
Dates: 21. October 2013 -21. October 2013
More information: <http://sites.google.com/site/sociallyawaremultimedia2013/home>
Sponsored by ACM SIGMM

This workshop provides a forum for researchers and practitioners to share novel and groundbreaking results on socially-aware multimedia. With special emphasis on innovative directions and on brave ideas, the final goal is to recognize an emergent inter-disciplinary area at the conjunction of multimedia research, social science, and human-computer interaction. In ... [Read more](#) →

MAED

INTERNATIONAL WORKSHOP ON MULTIMEDIA ANALYSIS FOR ECOLOGICAL DATA

Submission deadline: 05. June 2013
Location: Barcelona, Spain
Dates: 22. October 2013 -22. October 2013
More information: <http://maed2013.dieei.unict.it>
Sponsored by ACM SIGMM

With the recent progress in digital cameras and sensors, as well as in network bandwidth and information storage capacities, the production of multimedia data has become an easy task, resulting in a huge amount of multimedia available on the web, in broadcast data streams, or in personal and professional databases. ... [Read more](#) →

MIIRH

Workshop on Multimedia Indexing and information Retrieval for Healthcare

Submission deadline: 30. April 2013
Location: Barcelona, Spain
Dates: 22. October 2013 -22. October 2013
More information: <http://mklab.itl.gr/miirh/?p=43>
Sponsored by ACM SIGMM

The worldwide increase in average life expectancy, the improvement of healthcare and the higher average age of the workforce is significantly affecting society, healthcare systems and world economies. Multimodal data is playing an increasingly significant role in healthcare, with sophisticated technologies involved in monitoring and diagnosis, the advent of smart ... [Read more](#) →

CFPs: Sponsored by ACM

ECRC

ACM European Computing Congress

Submission deadline:
Location: Paris, France

Dates: 02. May 2013 -04. May 2013
More information: <http://ecrc.acm.org/>
Sponsored by ACM

Registration is now open for ECRC 2013: The First ACM European Computing Congress in collaboration with CHI13 "Changing Perspectives" May 2-4, 2013 Early Registration Deadline – April 3, 2013 Organized by ACM Europe this event is co-locating multiple research conferences, workshops, and meetings to create a significant gathering of European ... [Read more](#) →

CFPs: Not ACM-sponsored

ISM

IEEE International Symposium on Multimedia

Submission deadline: 21. April 2013
Location: Anaheim, CA, USA
Dates: 09. December 2013 -11. December 2013
More information: <http://ism.eecs.uci.edu/ISM2013/>
Sponsored by IEEE

LSDVE

Large Scale Distributed Virtual Environments on Clouds and P2P

Submission deadline: 31. May 2013
Location: Aachen, Germany
Dates: 27. August 2013 -27. August 2013
More information: <http://www.di.unipi.it/%7Ericci/LSDVE.html>

PV

International Packet Video Workshop

Submission deadline: 10. June 2013
Location: San Jose, CA, USA
Dates: 12. December 2013 -13. December 2013
More information: <http://pv2013.itec.aau.at/>

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