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2011 Multimedia Systems

ACM Multimedia Systems 2011

February 23-25, 2011
San Jose, California

Registration Now Open - Click Here
New for 2011: Remote Participation Via WebEx

The ACM Multimedia Systems conference provides a forum for researchers, engineers, and scientist to present and share their latest research findings in multimedia systems. While research about specific aspects of multimedia systems is regularly published in the various proceedings and transactions of the networking, operating system, real-time system, and database communities, MMSys aims to cut across these domains in the context of multimedia data types. This provides a unique opportunity to view the intersections and interplay of the various approaches and solutions developed across these domains to deal with multimedia data types. Furthermore, MMSys provides an avenue for communicating research that addresses multimedia systems holistically.

Embedded within this year's technical program is a special session on Dynamic Adaptive Streaming over HTTP (DASH). The papers within the special session were chosen from submissions to a separate Call For Papers and selected by a more specialized technical program committee.

Hosted By Cisco

This year the conference will be hosted by Cisco. The MMSys organizing committee gratefully acknowledges this generous show of support for this research community and welcomes the participation of all industry researchers.

NOTE FOR INTERNATIONAL ATTENDEES

International registrants should be particularly aware and careful about visa

requirements, and should plan travel well in advance. All visa inquiries must be handled by ACM HQ. Please send your request for a letter in support of a visa application to supportletters@acm.org; include your name, mailing address, fax number, and the name of the conference you are attending. (Authors of papers/posters should include the title). Please note that ACM does not issue formal “letters of invitation” to any of its conferences.

Sponsored by ACM SIGMM
In-Cooperation with ACM SIGCOMM

Multimedia Systems Conference

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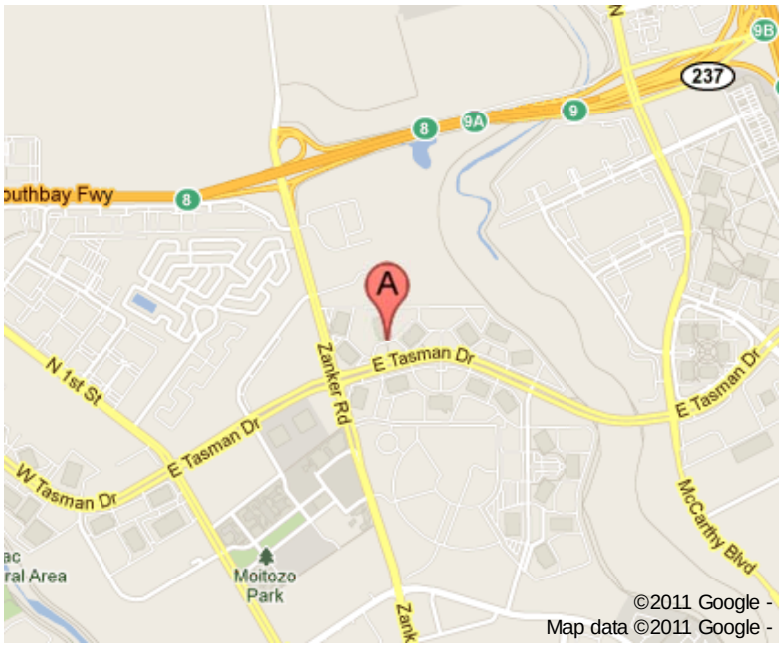
Venue and Local Arrangements

Venue

MMSys 2011 will be hosted by Cisco and will be held at:

Cisco Building 3
225 East Tasman Dr.
San Jose, CA 95134



View Larger Map

Public Transportation

The venue is easily accessible via the Santa Clara Valley Transportation Authority (http://www.vta.org) light rail system. Building 3 is nearest to the *Cisco Way* stop on the Blue Line. A system map is available here.

Hotels

There is no official hotel for MMSys 2011. The hotels listed below are only a few of the many possible accommodations available in the area and are provided only as a suggestion.

In Santa Clara:

Hyatt Santa Clara

Next to a tram station. While a tram connection is required, travel time is short and convenient.

In San Jose:
These hotels are all near tram stops that do not require a connection, but travel time is about 30 minutes by tram and 15 minutes by car.

Marriott

Radisson

Hilton

In Milpitas:

Staybridge and Crowne Plaza

These hotels are part of the same hotel group and are within walking distance of the venue. A hotel shuttle may be available as well (please check with the hotel directly).

Courtyard by Marriott, Milpitas

About 2.5 miles away but the tram is direct and takes 15-20 mins end-to-end. There is a giant mall next to the hotel.

Multimedia Systems Conference

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Technical Program

AT A GLANCE

Wednesday, February 23rd, 2011

8:00 Registration and Breakfast
8:30 Opening remarks
8:45 Keynote
9:45 Break
10:15 Wireless and Mobile
11:45 Lunch
1:00 Networking
2:30 Break
3:00 Data Transmission and QoS
4:30 Break
4:45 Dataset Track
6:00 (End Day 1)

Thursday, February 24th, 2011

8:30 Breakfast
9:00 Keynote
10:00 Break
10:25 Modern Media Transport 1
12:15 Lunch
1:00 Cisco Demos
4:30 System Performance
6:00 (End Day 2)

Friday, February 25th, 2011

7:45 Breakfast
8:15 Encoding and Repair
9:45 Break
10:05 Modern Media Transport 2
12:05 Closing Remarks
12:15 (End Day 3)

DETAILS

Wednesday, February 23rd, 2011

(8:00) **Registration and Breakfast**

(8:30) **Opening Remarks** (slides)

(8:45) **Keynote**

Alain Fiocco (Cisco) (slides)

(9:45) **Break**

(10:15) **Wireless and Mobile**

Session Chair: Klara Nahrstedt (University of Illinois, Urbana-Champaign)

GPS-aided Recognition-based User Tracking System with Augmented Reality in Extreme Large-scale Areas (slides)
W. Guan, S. You, U. Neumann

Energy-Efficient Mobile Video Management using Smartphones (slides)
J. Hao, S. Kim, S. Ay, R. Zimmermann

MultiSense: Fine-grained Multiplexing for Steerable Camera Sensor Networks (slides)
N. Sharma, D. Irwin, P. Shenoy, M. Zink

(11:45) **Lunch**

(1:00) **Networking**

Session Chair: Roger Zimmerman (National University of Singapore)

Multimedia-unfriendly TCP Congestion Control and Home Gateway Queue Management (slides)
L. Stewart, D. Hayes, G. Armitage, M. Welzl, A. Petlund

Effects of Internet Path selection on Video QoE (slides)
M. Venkataraman, M. Chatterjee

Improving the Performance of Quality-Adaptive Video Streaming over Multiple Heterogeneous Access Networks (slides)
K. Evensen, D. Kaspar, C. Griwodz, P. Halvorsen, A. Hansen, P. Engelstad

(2:30) **Break**

(3:00) **Data Transmission and QoS**

Session Chair: Grenville Armitage (Swinburne University of Technology)

Synchronized Dissemination in Multi-site Interactive 3D Tele-immersion (slides)
Z. Huang, W. Wu, K. Nahrstedt

Quantifying QoS Requirements of Network Services: A Cheat-Proof Framework (slides)
K. Chen, C. Wu, Y. Chang, C. Lei

Efficient Data Transmission Between Multimedia Web Services via Aspect-Oriented Programming (slides)
D. Seiler, E. Juhnke, R. Ewerth, M. Grauer, B. Freisleben

(4:30) **Break**

(4:45) **Dataset Track**

Session Chair: Michael Zink (University of Massachusetts, Amherst)

Network Traces of Virtual Worlds: Measurements and Applications (slides)
Y. Wang, C. Hsu, J. Singh, X Liu

End-to-End and Network-Internal Measurements of Real-Time Traffic to Residential Users (slides)
M. Ellis, C. Perkins, D. Pezaros

The Stanford Mobile Visual Search Dataset (slides)
V. Chandrasekhar, D. Chen, S. Tsai, N. Cheung, H. Chen, G. Takacs, Y. Reznik, R. Vedantham, R. Grzesczcuk, J. Bach, B. Girod

World of Warcraft Avatar History Dataset (slides)
Y. Lee, K. Chen, Y. Cheng, C. Lei

Affect Corpus 2.0: An Extension of a Corpus for Actor Level Emotion Magnitude Detection (slides)
R. Calix, G. Knapp

(6:00) **End of Day 1**

Thursday, February 24th, 2011

(8:30) **Breakfast**

(9:00) **Keynote** (slides)

HTTP Adaptive Streaming in Practice

Mark Watson (Netflix)

Abstract: This talk will give an overview of Netflix's large scale HTTP adaptive streaming system, discuss some of the reasons why we chose this technology and introduce some of the challenges we face in moving to a standards-based solution. I'll also discuss a general model of the "adaptivity" problem and highlight some areas for future research into adaptation algorithms.

Bio: Mark Watson is a senior member of the engineering team at Netflix, focusing on adaptive streaming system architecture, streaming quality and standardization. He previously held the position of Director of Research at Digital Fountain, working on internet video delivery solutions and a Principal Engineer position at Qualcomm. He is a significant contributor to the current MPEG DASH adaptive streaming standard as well as numerous other standards for media delivery over IP networks.

(10:00) **Break**

(10:25) **Modern Media Transport 1**
Session Chair: Christian Timmerer (ITEC)

3GPP Dynamic Adaptive Streaming over HTTP - Standards and Design Principles (30 min) (slides)
T. Stockhammer

Feedback Control for Adaptive Live Video Streaming (30 min)
L. De Cicco, S. Mascolo, V. Palmisano (slides)

An Experimental Evaluation of Rate Adaptation Algorithms in Adaptive Streaming over HTTP (30 min) (slides)
S. Akhshabi, A. Begen, C. Dovrolis

Rate Adaptation for Adaptive HTTP Streaming (20 min) (slides)
C. Liu, I. Bouazizi, M. Gabbouj

(12:15) **Lunch**

(12:45) **Start walking to Building 10 Executive Briefing Center (ground floor)**

(1:00 - 2:00) **Building 10 EBC Demos**

(2:00) **Start walking to Building 6 IPTV Lab (ground floor)**

(2:15 - 4:15) **IPTV Demos**

(4:15) **Walk back to Building 3 New Frontier room**

(4:30) Impact of Flash Memory on Video-on-Demand Storage: Analysis of Tradeoffs (slides)

M. Ryu, H. Kim, U. Ramachandran

- Watching User Generated Videos with Prefetching (slides)
  S. Khemmarat, R. Zhou, L. Gao, M. Zink
- Dynamic Codec with Priority for Voice over IP in WLAN (slides)
  K. Stoeckigt, H. Vu, P. Branch

(5:30) **End of Day 2**

Friday, February 25th, 2011

(7:45) **Breakfast**

(8:15) **Encoding and Repair**

Session Chair: Wu-chi Feng (Portland State University)

Adaptive Encoding of Zoomable Video Streams based on User Access Pattern (slides)
N. Khiem, G. Ravindra, W. Ooi

On the Impact of Quality Adaptation in SVC-based P2P Video-on-Demand Systems (slides)
O. Abboud, T. Zinner, K. Pussep, R. Steinmetz

Error-Resilient Live Video Multicast using Low-Rate Visual Quality Feedback (slides)
D. Varodayan, W. Tan

(9:45) **Break**

(10:05) **Modern Media Transport 2**

Session Chair: Ali C. Begen (Cisco)

Evaluation of HTTP-based Request-Response Streams for Internet Video Streaming (30 min) (slides)
R. Kuschnig, I. Kofler, H. Hellwagner

iDASH: Improved Dynamic Adaptive Streaming over HTTP using Scalable Video Coding (30 min) (slides)
Y. Sánchez, T. Schierl, C. Hellge, T. Wiegand, D. Hong, D. De Vleeschauwer, W. Van Leekwijck, Y. Lelouedec

Usages of DASH for Rich Media Services (20 min) (slides)
J. Feuvre, C. Concolato, R. Bouqueau

A Test-Bed for MPEG Dynamic Adaptive Streaming over HTTP featuring Session Mobility (20 min) (slides)
C. Müller, C. Timmerer

DRM Protected Dynamic Adaptive HTTP Streaming (20 min) (slides)
F. Hartung, S. Kesici, D. Catrein

(12:05) **Closing Remarks**

(12:15) **End of Day 3**

Multimedia Systems Conference

Special Session: Modern Media Transport

Dynamic Adaptive Streaming over HTTP (DASH)

In recent years, the Internet has become an important channel for delivery of multimedia. The HTTP protocol is widely used on the Internet. Recently, it has also become a primary protocol for the delivery of multimedia content, and a number of proprietary solutions are available. This special session will present novel contributions and breaking results on all aspects of Dynamic Adaptive Streaming over HTTP (DASH) and Modern Media Transport.

TPC members

Ali C. Begen, Cisco, Canada

Hermann Hellwagner, Klagenfurt University, Austria

Jörn Ostermann, Leibniz Universität Hannover, Germany

Thomas Schierl, Fraunhofer/HHI, Germany

Iraj Sodagar, Microsoft, USA

Thomas Stockhammer, Nomor Research GmbH, Germany

References

[1] ISO/IEC JTC 1/SC 29/WG 11 (MPEG), “Call for Proposals on MPEG Media Transport (MMT)”, N11539, Geneva, Switzerland, July 2010. Available at http://multimediacommunication.blogspot.com/2010/08/mpeg-media-transport...

[2] ISO/IEC JTC 1/SC 29/WG 11 (MPEG), “Requirements on MPEG Media Transport (MMT)”, N11540, Geneva, Switzerland, July 2010. Available at http://multimediacommunication.blogspot.com/2010/08/mpeg-media-transport...

[3] ISO/IEC JTC 1/SC 29/WG 11 (MPEG), “MPEG Media Transport (MMT) Context and Objective”, N11541, Geneva, Switzerland, July 2010. Available at http://multimediacommunication.blogspot.com/2010/08/mpeg-media-transport...

[4] ISO/IEC JTC 1/SC 29/WG 11 (MPEG), “Use Cases for MPEG Media Transport (MMT)”, N11542, Geneva, Switzerland, July 2010. Available at http://multimediacommunication.blogspot.com/2010/08/mpeg-media-transport...

[5] “HTTP Streaming of MPEG Media”, http://multimediacommunication.blogspot.com/2010/05/http-streaming-of-mp...

Special Session Organizer

Christian Timmerer, Klagenfurt University, Deptartment of Information Technology (ITEC), Multimedia Communications Group;

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Program Chair - Modern Media Transport Track

Christian Timmerer, Klagenfurt University, Austria

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Multimedia Systems Conference

Home

WebEx Remote Participation

Thanks to the generous support of Cisco, oral presentations made at MMSys 2011 will also be available to remote participants via WebEx. There is a separate WebEx URL for each day of the conference listed below. The participation password for all three days is "cisco" (case-sensitive).

Day 1 (2/23): https://cisco.webex.com/cisco/onstage/g.php?t=a&d=608661009

Day 2 (2/24): https://cisco.webex.com/cisco/onstage/g.php?t=a&d=607222314

Day 3 (2/25): https://cisco.webex.com/cisco/onstage/g.php?t=a&d=601001110

Multimedia Systems Conference

Dataset hosting

The datasets that were published in MMSys 2011 are available online. Currently, you can find them **here**.

MMSys Dataset Track

The ACM Multimedia Systems conference provides a forum for researchers, engineers, and scientist to present and share their latest research findings in multimedia systems. For more information, please see the Multimedia Systems Conference website.

MMSys has a Dataset Track to encourage and recognize dataset sharing among researchers from both industry and academia. All datasets in the track include:

- A URL where the dataset can be downloaded.
- A short paper describing the format of the data collected, the methodology used to collect the dataset, and basic characterizing statistics from the dataset.

2011

Use of the datasets in published work should be acknowledged by a full citation to the authors' papers at the MMSys conference:

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MMSys'11, February 23-25, San Jose, California, USA
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Network Traces of Virtual Worlds: Measurements and Applications (paper)
authors: Y. Wang, C. Hsu, J. Singh, X Liu

End-to-End and Network-Internal Measurements of Real-Time Traffic to Residential Users (paper)
authors: M. Ellis, C. Perkins, D. Pezaros

The Stanford Mobile Visual Search Dataset (paper)
authors: V. Chandrasekhar, D. Chen, S. Tsai, N. Cheung, H. Chen, G. Takacs, Y. Reznik, R. Vedantham, R. Grzeszczuk, J. Bach, B. Girod

World of Warcraft Avatar History Dataset (paper)
authors: Y. Lee, K. Chen, Y. Cheng, C. Lei

Affect Corpus 2.0: An Extension of a Corpus for Actor Level Emotion Magnitude Detection (paper)
authors: R. Calix, G. Knapp