

# Rate Agnostic Content Identification and De-duplication in the Media Delivery Networks



## Dr Zhu Li

Associate Professor  
Department of Computer Science & Electrical Engineering (CSEE)  
University of Missouri – Kansas City  
USA

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Time : 2:30 p.m. – 3:30 p.m.

Venue : Room PQ703, 7/Floor, PQ Core, Mong Man Wai Building,  
The Hong Kong Polytechnic University

### ► Abstract

The Internet is now dominated by the video traffic, and efforts are underway to re-architect the next-gen Internet to better serve the video traffic, moving away from a connectivity-centric design, to a content-centric design. One central issue for this new architecture is a new compact and robust media content identification scheme that can enable efficient content discovery, routing, redundant elimination in the networks and de-duplication in various network caches. In this talk, I will present an Scaled Eigen Appearance Feature (SEAF) modeling scheme that has been demonstrated to be very effective in playback verification. For content identification and de-duplication, a SEAF indexing forest solution for approximate nearest duplicate frame search, coupled with a highly efficient likelihood pruning scheme, can provide highly accurate and fast content fragments discovery and de-duplication in large video repository in caches.

[Part of APSIPA Distinguished Lecturer series for 2016-17: <http://www.apsipa.org/edu.htm>]

### ► About the Speaker

Zhu Li is now an Associate Professor with the Dept of Computer Science & Electrical Engineering (CSEE), University of Missouri, Kansas City, and director of the Multimedia Computing & Communication (MC2) Lab. He received his PhD in Electrical & Computer Engineering from Northwestern University, Evanston in 2004. He is the ad-hoc group co-chair for the MPEG Point Cloud Compression group. He was AFRL Faculty Fellow at the US Air Force Academy in Summer 2016, 2017, Sr. Staff Researcher/Sr. Manager with Samsung Research America's Multimedia Standards Research Lab in Richardson, TX, 2012-2015, Sr. Staff Researcher/Media Analytics Group Lead with FutureWei (Huawei) Technology's Media Lab in Bridgewater, NJ, 2010~2012, and an Assistant Professor with the Dept of Computing, The Hong Kong Polytechnic University from 2008 to 2010, and a Principal Staff Research Engineer with the Multimedia Research Lab (MRL), Motorola Labs, from 2000 to 2008.

His research interests include audio-visual analytics and machine learning with its application in large scale video repositories annotation, mining and recommendation, video object identification and event recognition, as well as video adaptation, source-channel coding and distributed optimization issues of the wireless video networks. He has 25 issued or pending patents, 90+ publications in book chapters, journals, conference proceedings and standard contributions in these areas. He is an IEEE senior member, Ad Hoc Co-Chair of the MPEG Point Cloud Compression group, associated editor (2015~) for IEEE Trans. on Multimedia, and associated editor (2016~) for IEEE Trans on Circuits & System for Video Technology, associated editor (2015~) for Journal of Signal Processing Systems (Springer), steering committee member of IEEE ICME, elected member (2014-2017, 2017-2020) of the IEEE Multimedia Signal Processing (MMSP) Tech Committee, elected Vice Chair (2008-2010), Standards Liaison (2014-2016) and Steering Committee Chair (2016-) of the IEEE Multimedia Communication Technical Committee (MMTC), member of the Best Paper Award Committee, ICME 2010, co-editor for the Springer-Verlag book on "Intelligent Video Communication: Techniques and Applications", and "Multimedia Analysis, Computing and Communication.". He received the Best Paper Award at IEEE Int'l Conf on Multimedia & Expo (ICME), Toronto, 2006, and the Best Paper (DoCoMo Labs Innovative Paper) Award at IEEE Int'l Conf on Image Processing (ICIP), San Antonio, 2007.

### All are welcome!

Enquiries:

Professor George Baci

Email: [csgeorge@comp.polyu.edu.hk](mailto:csgeorge@comp.polyu.edu.hk)

Tel : 2766 7295 / 2766 7272

