

Ngai-Man (Man) Cheung

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Associate Professor

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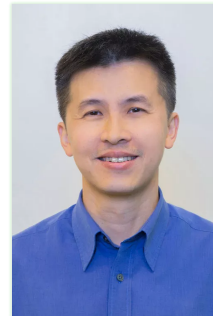
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Pillar / Cluster: Information Systems Technology and Design

Research Areas: Artificial and Augmented Intelligence, Visual Computing, Data Science



Faculty

- > [Alexander Binder](#)
- > [Sudipta Chattopadhyay](#)
- > **Ngai-Man (Man) Cheung**
- > [Ernest Chong](#)
- > [Dorien Herremans](#)
- > [Jianying Zhou](#)
- > [Oka Kurniawan](#)
- > [Hyowon Lee](#)
- > [Norman Lee Tiong Seng](#)

BIOGRAPHY

EDUCATION BACKGROUND

RESEARCH OPPORTUNITIES

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AWARDS

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RESEARCH INTEREST

Biography

I received my Ph.D. degree in Electrical Engineering from University of Southern California (USC), Los Angeles, CA, in 2008. My Ph.D. research focused on image and video coding, and the work was supported in part by [NASA-JPL](#).

From 2009-2011, I was a postdoctoral researcher with the Image, Video and Multimedia Systems group at Stanford University, Stanford, CA.

I have also held research positions with Texas Instruments Research Center Japan, Nokia Research Center, [IBM T. J. Watson Research Center](#), HP Labs Japan, Hong Kong University of Science and Technology (HKUST), and [Mitsubishi Electric Research Labs \(MERL\)](#). My industrial work has resulted in 6 U.S. patents granted with several pending.

My research interest is to develop advanced algorithms to enable efficient processing of multimedia data. I am also interested in exploring collaborative and interdisciplinary research that involves applying signal processing or multicore technology to address problems in other areas.

Education Background

- Ph.D. in Electrical Engineering, University of Southern California (USC), Los Angeles, CA, USA, 2008

Research Opportunities

I am currently looking for Postdoc, Research Assistant and Visiting Student. If interested, kindly send me your CV via email.

Research Group

RESEARCH INTEREST

- Image, Video and Signal Processing
- Multimedia Communication
- Computer Vision

University, Iran

- Fang Lu (Postdoc, 5/2012 –); PhD – HKUST (Hong Kong University of Science and Technology); B.Eng. – USTC (University of Science and Technology of China)
- Mohammad Rostami (Research Assistant, 8/2012 –); MS – University of Waterloo, Canada; BSc – Sharif University of Technology, Tehran, Iran
- Ma Rui (Visiting Student, 6/2012 – 8/2012); PhD Candidate – HKUST (Hong Kong University of Science and Technology); B.S. – Nanjing University

Awards

- Best Poster Award, IEEE Life Sciences Grand Challenges Conference 2013
- Best Student Paper Award, 20th IEEE International Conference on Image Processing (ICIP) 2013 (Total 2102 submissions)
- Honorable Mention, ACM Multimedia Open Source Software Competition 2011
- Best Paper Award Nomination, IEEE Transactions on CSVT (Circuit and System for Video Technology) 2010
- Best Paper Second Place Award from IS&T/SPIE VCIP 2008 (Visual Communications and Image Processing)
- Best Student Paper Award Honorable Mention – USC Electrical Engineering 2008
- Best Student Paper Award, IEEE MMSP 2007 (International Workshop on Multimedia Signal Processing)
- Best Paper Award (co-recipient) from EURASIP JASP 2006 (Journal on Advances in Signal Processing)
- Best Paper Award Finalists at PCS 2007 (Picture Coding Symposium, technically sponsored by IEEE, EURASIP and IET)
- USC Office of International Services Academic Achievement Award 2008
- Croucher Foundation Fellowship 2008

Selected Publications

- Dothan Toan, Quang D. Tran, Ngai-Man Cheung, **"Embedding based on function approximation for image retrieval,"** in Proc. IEEE CVPR 2015. The 28th IEEE Conference on Computer Vision and Pattern Recognition.
- Yijian Xiang, Lu Fang, Ren Li, Ngai-Man Cheung, **"Depth Error Induced Virtual View Synthesis Distortion Estimation for 3D Video Coding,"** in Proc. The 25th IEEE Data Compression Conference (DCC) 2015.
- Yichen Zhang, Ngai-Man Cheung, Lu Yu, **"On the Efficiency of View Synthesis Prediction for 3D Video Coding,"** in Proc. The 25th IEEE Data Compression Conference (DCC) 2015.
- Lu Fang, Ngai-Man Cheung, Dong Tian, Anthony Vetro, Huifang Sun, Oscar C. Au, **"An Analytical Model for Synthesis Distortion Estimation in 3D Video,"** IEEE Transactions on Image Processing, Jan, 2014.
- Bernd Girod, Vijay Chandrasekhar, David Chen, Ngai-Man Cheung, Radek Grzeszczuk, Yuriy Reznik, Gabriel Takacs, Sam Tsai, Ramakrishna Vedantham, **"Mobile Visual Search,"** IEEE Signal Processing Magazine – Special Issue on Mobile Media Search, vol. 28, no. 4, pp. 61-76, July 2011.
- Sherif Halawa, Derek Pang, Ngai-Man Cheung, and Bernd Girod, **"ClassX – An Open Source Interactive Lecture Streaming System,"** in Proc. ACM Multimedia (ACM MM) 2011. [Also reported in: [Stanford News](#), [Stanford Daily](#), [ACM TechNews](#), [Computer Vision](#)

- Ngai-Man Cheung, Xiaopeng Fan, Oscar C. Au, Man-Cheung Kung, **"Video Coding on Multi-Core Graphics Processors,"**IEEE Signal Processing Magazine, vol. 27, no. 2, pp. 79-89, March 2010.
- Ngai-Man Cheung and Antonio Ortega, **"Distributed Compression of Hyperspectral Imagery,"** in Distributed Source Coding, Pier Luigi Dragotti and Michael Gastpar, Eds., Academic Press, pp. 269-292, 2009.
- Ngai-Man Cheung, Huisheng Wang, Antonio Ortega, **"Sampling-based Correlation Estimation for Distributed Source Coding Under Rate and Complexity Constraints,"** IEEE Transactions on Image Processing, vol. 17, no. 11, pp. 2122-2137, Nov. 2008.