

Chuahao Yeo

CONTACT INFORMATION	337C Cory Hall Dept. of EECS, UC Berkeley Berkeley, CA 94720	<i>E-mail:</i> zuohao@alum.mit.edu <i>WWW:</i> http://zuohao.googlepages.com
RESEARCH INTERESTS	My main area of interest is signal processing, and more specifically image and video processing. I am particularly interested in the intersection of signal processing and computer vision issues involved in multi-camera networks. I am also investigating the automatic extraction of information from visual data by combining signal processing and machine learning techniques.	
EDUCATION	University of California, Berkeley , Berkeley, CA Ph.D., Electrical Engineering and Computer Sciences <ul style="list-style-type: none">• Thesis: "Signal processing meets computer vision: Overcoming challenges in wireless camera networks"• Advisor: Prof. Kannan Ramchandran• Designated Emphasis in Communication, Computation and Statistics• GPA: 3.978/4.000 Certificate in Management of Technology <ul style="list-style-type: none">• Classes taken include "Future of IT", "International trade and competition in high tech", "Technology strategy" and "Economics of Information" Massachusetts Institute of Technology , Cambridge, MA M.Eng., Electrical Engineering and Computer Sciences <ul style="list-style-type: none">• Thesis: "An Investigation of Methods for Digital Television Format Conversions"• Advisor: Prof. Jae S. Lim• GPA: 5.0/5.0 S.B., Electrical Science and Engineering <ul style="list-style-type: none">• Minor in Economics• GPA: 5.0/5.0	2004-2009 1998-2002
WORK EXPERIENCE	<i>Graduate Student Researcher</i> University of California, Berkeley Conducted research on distributed video compression and camera calibration in multi-camera networks and on efficient action recognition and group dynamics analysis using compressed video.	Fall 2005 to Spring 2009 Berkeley, California USA
	<i>Research Intern</i> Hewlett-Packard Labs Investigated and implemented robust high-definition video transmission.	Summer 2008 Palo Alto, California USA
	<i>Research Intern</i> IDIAP Investigated multi-modal modeling of meeting videos.	Feb 2008 Martigny, Valais, Switzerland
	<i>Graduate Student Instructor</i> University of California, Berkeley Taught Digital Signal Processing (undergraduate class).	Fall 2006 Berkeley, California USA

WORK EXPERIENCE (CONTINUED) *Intern* Summer 2005
Omnivision Technologies, Inc. Sunnyvale, California USA
 Implemented and tested video processing algorithms for CMOS camera chips.

Research Engineer Summer 2004
Institute for Infocomm Research Singapore
 Conducted research in the field of media analysis, specifically on the detection of picture-in-picture like sub-windows in news video.

Combat Medic Specialist Fall 2002 to Spring 2004
Singapore Armed Forces Singapore
 Involved in overseeing the day-to-day running of a medical center. Worked on software projects to improve the efficiency of medical logistics. Took part in providing medical coverage for events such as National Day Parade.

Research Assistant Fall 2001 to Spring 2002
Massachusetts Institute of Technology Cambridge, Massachusetts USA
 Conducted research on HDTV format conversion and resolution enhancement. The investigation focused on specific format conversions and the various methods of accomplishing the task.

Teaching Assistant Spring 2002
Massachusetts Institute of Technology Cambridge, Massachusetts USA
 Taught 2-D Signal and Image Processing (graduate class).

Intern Summer 2001
Federal Communications Commission Washington DC USA
 Conducted research on engineering issues in spectrum sharing between satellite and terrestrial broadcasters, and in spectrum sharing between Ultra-wideband (UWB) systems and traditional communications systems (such as QPSK). Considered public policy implications in these issues.

JOURNAL PUBLICATIONS

C. Yeo, P. Ahammad, K. Ramchandran and S. S. Sastry, "High speed action recognition and localization in compressed domain videos," in *IEEE Transactions on Circuits and Systems for Video Technology*, Aug 2008.

D. Schonberg, S. Draper, C. Yeo and K. Ramchandran, "On compression of encrypted image and video sequences," in *IEEE Transactions on Information Forensics and Security*, Dec 2008.

D. Jayagopi, H. Hung, C. Yeo and D. Gatica-Perez, "Modeling dominance in group conversations using non-verbal activity cues," in *IEEE Transactions on Audio, Speech and Language Processing*, Mar 2009.

C. Yeo and K. Ramchandran, "Robust distributed multi-view video compression for wireless camera networks," submitted to *IEEE Transactions on Image Processing*.

C. Yeo, P. Ahammad and K. Ramchandran, "Distributed rate-efficient visual correspondences for mobile wireless camera networks," submitted to *International Journal of Computer Vision*.

H. Hung, C. Yeo and G. Friedland, "Approaching On-line Audio-visual Association through Aspects of Human Discourse," submitted to *Computer Vision and Image Understanding*.

SELECTED
CONFERENCE
PRESENTATIONS

C. Yeo, P. Ahammad, H. Zhang and K. Ramchandran, "Rate-constrained distributed distance testing and its applications," in *IEEE International Conference on Acoustics, Speech, and Signal Processing*, 2009.

C. Yeo, W.-T. Tan and D. Mukherjee, "Receiver error concealment using acknowledge preview (RECAP) - an approach to resilient video streaming," in *IEEE International Conference on Acoustics, Speech, and Signal Processing*, 2009.

H. Zhang, C. Yeo and K. Ramchandran, "Rate efficient remote video file synchronization," in *IEEE International Conference on Acoustics, Speech, and Signal Processing*, 2009. **Finalist for Best Student Paper Award**

G. Friedland, H. Hung and C. Yeo, "Multi-modal speaker diarization of real-world meetings using compressed-domain video features," in *IEEE International Conference on Acoustics, Speech, and Signal Processing*, 2009.

D. Jayagopi, H. Hung, C. Yeo and D. Gatica-Perez, "Predicting the dominant clique in meetings through fusion of nonverbal cues," in *ACM Multimedia*, 2008.

H. Zhang, C. Yeo and K. Ramchandran, "VSYNC - A video file synchronization protocol," in *ACM Multimedia*, 2008. **Best Short Paper Award**

C. Yeo, P. Ahammad and K. Ramchandran, "Rate-efficient visual correspondences using random projections," in *IEEE International Conference in Image Processing*, 2008.

C. Yeo, P. Ahammad and K. Ramchandran, "A rate-efficient approach for establishing visual correspondences via distributed source coding," in *SPIE Visual Communications and Image Processing*, 2008.

P. Ahammad, C. Yeo, K. Ramchandran and S. S. Sastry, "Unsupervised discovery of action hierarchies in large collections of activity videos," in *IEEE International Workshop on Multimedia Signal Processing*, 2007.

C. Yeo, J. Wang and K. Ramchandran, "View synthesis for robust distributed video compression in wireless camera networks," in *IEEE International Conference in Image Processing*, 2007.

J. Wang, C. Yeo, V. Prabhakaran and K. Ramchandran, "On the role of helpers in peer-to-peer file download systems: design, analysis and simulation," in *International Workshop on Peer-to-Peer Systems*, 2007.

C. Yeo and K. Ramchandran, "Robust distributed multiview video compression for wireless camera networks," in *SPIE Visual Communications and Image Processing*, 2007. **Best Student Paper Award**

C. Yeo, P. Ahammad, K. Ramchandran and S. S. Sastry, "Compressed Domain Real-time Action Recognition," in *IEEE International Workshop on Multimedia Signal Processing*, 2006.

C. Yeo, Y. Zhu, Q. Sun and S.F. Chang, "A Framework for Sub-Window Shot Detection," in *International Multi-Media Modeling Conference*, 2005.

TECHNICAL REPORTS	<p>C. Yeo, "Signal processing meets computer vision: Overcoming challenges in wireless camera networks," <i>Ph.D. Thesis, UC Berkeley</i>, 2009.</p> <p>C. Yeo and K. Ramchandran, "Compressed domain video processing for activity estimation in dominance classification and slide transition detection," <i>Technical Report, UC Berkeley</i>, 2008.</p> <p>C. Yeo, "An Investigation of Methods for Digital Television Format Conversions," <i>M.Eng. Thesis, MIT</i>, 2002.</p>
COMPUTER SKILLS	<ul style="list-style-type: none"> • Familiar with Windows, Linux, Visual Studio. • Programming proficiency: C, C++, MATLAB, Java, Basic, Assembly.
SERVICE	<ul style="list-style-type: none"> • Active reviewer for prestigious journals and conferences including IEEE Transactions on Image Processing; IEEE Transactions on Circuit and Systems for Video Technology; Elsevier Image and Vision Computing; IEEE International Conference on Image Processing; IEEE International Conference on Acoustics, Speech and Signal Processing; Picture Coding Symposium. • UC Berkeley, Organized research group seminars, F2006, S2007, F2008. • Massachusetts Institute of Technology, HKN, Social Chair, 2001-2002. • Massachusetts Institute of Technology, HKN Tutoring Program, 2001. • Massachusetts Institute of Technology, Associate Advisor for Freshmen, 2000. • Singapore Students Associations Leadership Conference, Steering Committee Member, 2000-2001. • Massachusetts Institute of Technology, Singapore Students Society, President, 2000-2001. • Massachusetts Institute of Technology, Singapore Students Society, Vice-President, 1999-2000.
HONORS AND AWARDS	<p>2004-2009 - Agency for Science, Technology and Research (Singapore) National Science Scholar. Award covers full tuition and living allowances.</p> <p>2003 - Overall Best Trainee in Combat Medic Specialist Course (Singapore Armed Forces).</p> <p>1998-2002 - Public Service Commission (Singapore) Overseas Merit Scholar. Award covers full tuition and living allowances.</p> <p>1998 - Platoon Best Trainee in Combat Medic Course (Singapore Armed Forces).</p> <p>1998 - Lee Kuan Yew Award for Mathematics and Science (Singapore).</p> <p>1997 - International Physics Olympiad, Silver Medal.</p> <p>1996 - Singapore Physics Olympiad, Gold Medal and Overall Best Performer.</p> <p>1996 - Singapore Chemistry Olympiad, Gold Medal and Overall Best Performer.</p> <p>1996 - International Olympiad in Informatics, Honorable Mention.</p> <p>1994 - International Olympiad in Informatics, Member of National Team.</p>
MEMBERSHIP	IEEE, Tau Beta Pi, Eta Kappa Nu, Phi Beta Kappa
OTHER INTERESTS	Interests include technology, current affairs, history, music and jogging.