Sen-ching Samson Cheung

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Highlights of curriculum vita as of July 2010:

Current positions: Associate Professor, Department of Electrical & Computer Engineering and Center for Visualization & Virtual Environments, University of Kentucky (UK). Adjunct faculty, Joint Institute of University of Michigan-Shanghai Jiao Tong University (UM-SJTU).

Publications: Over 58 publications, including 12 journal papers published/accepted and 3 in preparation, 4 book chapters, 31 refereed conference publications including 5 invited papers, and 11 international standard contributions. 2 U.S. patents and 4 intellectual property disclosures at UK IPO office.

Awards: One of five finalists in Provost's Outstanding Teaching Award (2010), R&D 100 Award (2006, with C. Kamath et al.), Ralph E. Powe Junior Faculty Enhancement Award (2005), Best Poster Award at British Machine Vision Conference (2005, with E. Grossman et al.)

Funding: Funding exceeding $2,899,528 total (PI & co-PI), including US$1,067,196 as PI.

Research Areas: (1) Visual Object Identification, Tracking and Segmentation; (2) Distributed Camera Networks; (3) Audio-visual surveillance; (4) Anonymity, Cryptography and Stenography in the context of Signal-based Privacy Protection. (5) Augmented Reality for Early Childhood Special Education.

Teaching: 1 undergraduate course at UM-SJTU, 4 graduate and 9 undergraduate courses in UK since fall 2004. Average teaching evaluation: 3.4/4.0; Average course rating: 3.3/4.0. Courses taught include: Signal and Systems I & II, Multimedia Information Systems, Probabilistic Graphical Models, Computer Networks and Electric Circuit theory.

Student Advising: Primary advisor of 1 post-doctoral student, 11 graduate students (4 PhD, 7 MS), 6 undergraduate and 1 high-school researchers, including 1 PhD, 3 MS theses and 2 MS projects defended.

University Service: Participated in the departmental search committee and ad-hoc activities organized by Provost's committee on Undergraduate Math Education.

Professional Service: Associated Editor of Journals from American Statistical Association and EURASIP. Technical committee member of Multimedia Systems in IEEE Circuits and Systems Society. Session Chairs in 6 conferences and Program Committee Members in 16 conferences. Contributors to International Standard bodies ISO and ITU-T. Panel reviewer for NSF (2004). IEEE Senior member, ACM Senior member (pending) and EURASIP member.

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Education

Ph.D. **Electrical Engineering and Computer Sciences,**
University of California, Berkeley, CA **December 2002**
Dissertation Title: *Efficient Video Similarity Measurement and Search*
Research Adviser: Avideh Zakhor
Thesis Committee: Avideh Zakhor, Larry Rowe, Ray Larson, and Alistair Sinclair

B.S. **Computer Engineering (summa cum laude)**
University of Washington, Seattle, WA **July, 1992**

HKCEE **Equivalent to high school diploma in U.S.**
La Salle Secondary School, Hong Kong **July 1988**

Professional Experiences

7/2004 – present **Center for Visualization & Virtual Environments and Department of Electrical & Computer Engineering, University of Kentucky**
Associate Professor (since July 2010)
Assistant Professor

5/2008 – present **University of Michigan-Shanghai Jiao Tong University Joint Institute**
Adjunct Professor

10/2002 –6/2004 **Center for Applied Scientific Computing, Lawrence Livermore National Laboratory**
Postdoctoral Researcher

1/1998 – 9/2002 **Video and Image Processing Laboratory, Department of Electrical Engineering and Computer Sciences, UC Berkeley**
Graduate Student Researcher

1/1995 –12/1997 **Research Group, VTEL Inc. (Formerly Compression Labs Inc.)**
Research Engineer

8/1992 – 12/1994 **Video and Image Processing Laboratory, Department of Electrical Engineering and Computer Sciences, UC Berkeley**
Graduate Student Researcher

Awards and Newsworthy

- One of five finalists of the university-wide Provost's Outstanding Teaching Award (2010) [http://www.uky.edu/Provost/APFA/Awards_Honors/]
- Senior Member of IEEE (2007)
- Research work featured in Research Channel documentary titled "Surveillance Privacy Protection" (2006) [http://www.researchchannel.org/prog/displayevent.aspx?rID=5036&fD=1865]
- Work in Scientific Data Mining at Lawrence Livermore National Lab won R&D 100 Award (2006) [https://computation.llnl.gov/casc/awards/sapphire_rd100.html]
- Research work featured in a news article from Quadrangle, magazine of the University of Kentucky College of Engineering, titled "Privacy: the other side of security" (2006) [http://www.engr.uky.edu/comm/documents/winter2006quad.pdf]
- Grant from Department of Homeland Security featured in University of Kentucky news [http://news.uky.edu/news/display_article.php?artid=478]
- Dissertation Work featured in a news article from Red Herring Magazine titled "Video Search's Buried Treasure" (2006) [http://www.redherring.com/Home/15224]
- Finalist of DARPA Microsystems Technology Office (MTO) Young Faculty Award (2006)
- Ralph E. Powe Junior Faculty Enhancement Award from Oak Ridge Associated Universities (2005) [http://www.orau.org/news/releases/2005/fy05-37.htm]
- Best Poster Award in British Machine Vision Conference BMVC (2005)
- UC Berkeley Candidate for Microsoft Research Fellowship and Intel Research Fellowship (2000)
- Public Release of Matching Pursuit Video Codec with more than 5000 downloads (1999-2001)
- Recipient of National Science Foundation Fellowship (1992-1994)
- Cray Research Scholarship (1990-1992)
- Sophomore Medalist (first in sophomore class of University of Washington) (1989)
- Alcoa Foundation Scholarship (1989-1990)

Invited Talks

- Institute of Automation, Chinese Academy of Sciences, Beijing, China (Host: Dr. Kaiq Huang, June 2009)
- Microsoft Research Asia, Beijing, China (Host: Dr. Bin Zhu, June 2009)
- Zhejiang University, Hangzhou, China (Host: Professor Zhigeng Pan, June 2009)
- HP Labs, Palo Alto CA (Host: Dr. Wai-Tian Tan, March 2008)
- FX Palo Alto Laboratory, Inc. (Host: Dr. Larry Rowe, March 2008)
- University of California, Merced (Host: Professor Shawn Newsam, March 2008)
- Lawrence Livermore National Laboratory (Host: Dr. Chandrika Kamath, March 2008)
- Dong Hwa University (Host: Professor Mei-Juan Chen, Dec. 2007)
- Osaka University (Host: Professor Noboru Babaguchi, Dec. 2007)
- HP Labs Japan (Host: Dr. Gene Cheung, Dec. 2007)
- National Taiwan University (Host: Professor Shiao-Yi Chien, Dec. 2007)
- National Tsing Hwa University (Host: Professor Chia-Wan Lin, Dec. 2007)
- Hong Kong Chinese University (Host: Professor Ming-Hwa Chen, Dec. 2007)
- Hong Kong University of Sciences and Technologies (Host: Professor Oscar Au, Dec. 2007)
- University of Washington (Host: Professor Ming-Ting Sun, Sept. 2007)
- DARPA Young Faculty Award Workshop (Nov. 2006)
- Privacy Research in Vision Workshop of IEEE CVPR (Host: Professor Terrance Bolt, June. 2006)
- University of Washington (Host: Professor Ming-Ting Sun, Sept. 2005)
- National Taiwan University (Host: Professor Jia-Ling Wu, Jan. 2005)
- Hong Kong Polytechnic University (Host: Professor Wan-Chi Siu, October 2004)
- Institute for Infocomm Research, National University of Singapore (Host: Professor Qi Tian, October 2004)
- Thomson Electronics Lab, New Jersey (Host: Dr. Yin Peng, October 2004)
- Multimedia Workshop at Columbia University (Host: Professor Shih-Fu Chang, June 2004)

Sponsored Research Projects (sorted by end-date)

Privacy Protection of Multimedia Processing
Principal Investigator: **Sen-ching S. Cheung**
Funding Agency: National Science Foundation
Funding Amount: $357,583 (August 2010 – July 2013)

Large Rapidly Deployable Immersive Visualization for Training and Simulation in Urban Terrains
Principal Investigator: Bruce Walcott
Co-P.I.: Ruigang Yang and **Sen-ching S. Cheung**
Funding Agency: United States Army
Funding Amount: $910,332 (May 2006 – September 2010)

Privacy Protecting Video Surveillance
Principal Investigator: **Sen-ching S. Cheung**
Co-P.I.: Ruigang Yang and Michael Hail
Funding Agency: Department of Homeland Security
Funding Amount: $694,613 (January 2006 – December 2009)

Industry Collaboration Fund
Principal Investigator: **Sen-ching S. Cheung**
Funding Agency: Washington Software Company and Youku.com
Funding Amount: $10,000 (July 2008)

Anti-Sniper Infrared Targeting Systems (ASITS) Phase III
Principal Investigator: Daniel Lau
Co-P.I.: J. Heath, Laurence Hassebrook, William Dieter and **Sen-ching S. Cheung**
Funding Agency: M2 Technologies Inc.
Funding Amount: $922,000 (January 2007 – July 2008)

Immersive and Interactive Spaces – NSF EPSCoR
Principal Investigator: Kevin Donohue
Senior Personnel: **Sen-ching S. Cheung** and others
Funding Agency: National Science Foundation
Funding Amount: $2,700,000 (June 2005 – May 2008)

REU Site: Electrical & Computer Engineering at the University of Kentucky
Principal Investigator: Ingrid St. Omar
Co-P.I.: Daniel Lau and Jane Jensen
Senior Personnel: **Sen-ching S. Cheung** and others
Funding Agency: National Science Foundation
Funding Amount: $259,365 (March 2006 – February 2008)

Privacy Protecting Video Surveillance
Principal Investigator: **Sen-ching S. Cheung**
Funding Agency: Oak Ridge Associated Universities (ORAU)
Funding Amount: $5,000 (October 2005 – October 2006)

University of Kentucky Startup Fund
Principal Investigator: **Sen-ching S. Cheung**
Funding Agency: College of Engineering, University of Kentucky
Funding Amount: $140,000 (August 2004 – August 2006)

Students Supervised

Graduate Students	*Degree (Year)*	*Thesis Title*
Vijay Venkatesh Mahalingam	Ph.D. (2010)	Video and Image Inpainting
Viswajith Karapoondi Nott	M.S. (2009)	Joint RFID and Visual Tracking System
Jian Zhao	M.S. (2008) Ph.D.(~2010)	Optimal Design and Evaluations of Camera Networks
Jithendra Parachuri	M.S. (2008) Ph.D.(~2011)	Rate-Distortion Optimized Data-Hiding
Nan Hu	M.S. (2007)	Secure Image Processing
Jayashri Chaudhari	M.S. (2007)	Privacy Protection for Life-log System
Cheng Hao Chang	M.S. (~2010)	Evaluation of Voice Conversion Techniques
Prashanth Rao Periketi	M.S. (~2010)	Eye-Gaze Improvements for Autistic Children
Anusha Raghunathan	M.S. (~2010)	Audio Privacy Protection
Edwin Sathiyamoorthy	M.S. (~2010)	Global-change Reactive Background Subtraction
Ying Lou	Ph.D. (~2011)	Image Processing in Encrypted Domain

Undergraduate Students	*Degree (Year)*	*Project*
Van Yadeck	B.S. EE (2006)	Blind Source Separation in Microphone Array
James Senders	B.S. EE (Tennessee State)	Audio Segmentation in Life-log System
Mamode Olubusay Ufomata	B.S. EE (2005)	Image Segmentation for Laser Detection in Welding
Greg Schardein	B.S. EE (2008)	Calibration of RFID Tracking System
Felix Setyawan	B.S. EE (2008)	Multi-camera Visual Tracking System
Larry Profitt	B.S. EE (~2009)	Audio Privacy Protection

High School Students	*Project*
Motoki Mizoguchi	Multi-camera Visual Tracking System (2008)

Teaching Experience

Instructor In-charge

Introduction to Electric Circuits – *Fall 2010, Summer 2009 (University of Michigan-Shanghai Jiao Tong Joint Institute)*

- This course is an introductory circuit course (in English) taught at UM-SJTU for exchange students from University of Michigan at Ann Arbor and local students in China. Topics include basic concepts of voltage and current; Kirchhoff's voltage and current laws; Ohm's law; voltage and current sources; Thevenin and Norton equivalent circuits; DC and low frequency active circuits using operational amplifiers, diodes, and transistors; small signal analysis; energy and power; time- and frequency-domain analysis of RLC circuits; basic passive and active electronic filters as well as laboratory experience with electrical signals and circuits.

Computer and Switching Networks (Undergraduate/Graduate) – *Fall 2008, Fall 2009, Fall 2010*

- This course is an introductory survey of the design and implementation of computer networks. We will focus on the concepts and fundamental design principles that have contributed to the global Internet's scalability and robustness and will survey the underlying technologies that have led to the Internet's phenomenal success.
- Course website: http://www.vis.uky.edu/~cheung/courses/ee586/fa08.html

Probabilistic Graphical Model (Graduate) - *Fall 2005, Spring 2006, Spring 2008, Fall 2009*

- This is a graduate-level course that covers the fundamentals and the latest research in Probabilistic Graphical Models. Major topics include various types of graphical models, junction tree algorithm, belief propagation, model selections, and non-parametric techniques.
- Course website: http://www.vis.uky.edu/~cheung/courses/ee639/sp06.html

Multimedia Information System (Graduate) - *Fall 2004*

- This graduate-level course introduces important technologies and standards in building Multimedia Information Systems (MIS). The emphasis is on using signal processing and pattern recognition techniques for representing, coding, searching, visualizing and protecting multimedia information.
- Course website: http://www.vis.uky.edu/~cheung/courses/ee639_fall04/fall04.html

Signals and Systems II (Undergraduate) - *Spring 2005, Fall 2005, Spring 2006, Fall 2006, Spring 2007*

- This undergraduate-level course is a continuation of the analysis of signals and linear systems with an emphasis on feedback and discrete-time systems. Topics include the Laplace and Z-transforms, state-variable, discrete-time signal and system, analysis and design of digital filters, discrete and fast Fourier Transform.
- Course website: http://www.vis.uky.edu/~cheung/courses/ee422G/sp07.html

Signals and Systems I (Undergraduate) - *Fall 2007*

- This undergraduate-level core course provides an introduction to some of the essential modeling and analysis tools used by practicing engineers. The concepts covered include discrete and continuous LTI systems, convolution, Fourier series and transforms, Laplace transforms, modulation and bandwidth concepts.
- Course website: http://www.vis.uky.edu/~cheung/courses/ee421G/fa07.html

Professional Activities

- Associate Editor of
    - EURASIP Journal on Information Security
    - Wiley International and American Statistical Association Journal on Statistical Analysis and Data Mining since 2009.
- Guest Editor of Special Issue on Enhancing Privacy Protection in Multimedia Systems in EURASIP Journal of Information Security (2009)
- Member of Multimedia Systems & Applications Technical Committee of IEEE Circuits and Systems Society
- Chair of
    - Session on "Encryption, Authentication and Identification" in IEEE International Conference of Multimedia and Expo 2009 (ICME 2009)
    - Program Area (Privacy Issues) IEEE 5th International Conference on Advanced Video and Signal Based Surveillance (AVSS 2008)
    - Special Session on Privacy Protection of Visual Information in IEEE International Conference on Image Processing (ICIP 2008)
    - Special Invited Session on Video Surveillance in IEEE International Conference on Circuits and Systems (ISCAS 2008)
    - Poster Session of Computer Vision for Interactive and Intelligent Environments (CV4IIE 2005).
    - Session on Watermarking and Multimedia Processing in ACM Multimedia 2004.
- Panel reviewer for the Directorate for Computer and Information Science and Engineering (CISE) of the National Science Foundation (2004)
- Technical Program Committee Member of
    - IEEE 6th International Conference on Advanced Video and Signal Based Surveillance (AVSS 09-10)
    - IEEE International Conference on Circuits and Systems (ISCAS 2008-2010)
    - IEEE SP Society International Workshop on Multimedia Signal Processing (MMSP 2008)
    - IEEE First International Workshop on Multimedia Analysis and Processing (IMAP 2007-2008)
    - IEEE International Conference on Advanced Information Networking and Applications (AINA-07)
    - IEEE International Conference on Multimedia & Expo 2005 (ICME 2005, 2010)
    - IADIS International conference WWW/Internet 2005
    - ACM Multimedia 2004
    - IEEE International Conference on Communications, Circuits and Systems (ICCCAS 2004)
- Representative of U.C. Berkeley in ISO Moving Picture Expert Group (MPEG) (1998)
- Company Representative in ITU (an international standard organization in telecommunication chartered by United Nation) Video Coding Expert Group (1995-1997)
- Reviewers for
    - IEEE International Conference on Image Processing (ICIP 2006-2010)
    - IEEE International Conference on Computer Vision and Pattern Recognition 2006 (CVPR 2006)
    - Advanced Concepts for Intelligent Vision Systems 2006 (ACVIS 2006)
- Regular reviewer for
    - EURASIP Journal on Applied Signal Processing
    - IEEE Transactions On Circuits and Systems for Video Technology
    - IEEE Transactions On Image Processing
    - IEEE Transactions On Multimedia
    - IEEE Transactions on Signal Processing
    - IEEE Signal Processing Letters
    - IEEE Transactions On Circuits and Systems II
    - ACM Transactions on Multimedia Computing, Communications, and Applications
    - Morgan Kaufmann Publishers
- Senior member of IEEE and Member of ACM

Patents and Inventions

1. Cheung, S.-C. and M. Chung. 2007. Efficient and Robust Identification of Partial Copies in Digital Video. University of Kentucky Intellectual Property 1479. United States Patent Application in preparation.

2. Cheung, S.-C. and J. Chaudhari. 2007. Audiovisual Privacy Protection for Portable Video Recording Devices. University of Kentucky Intellectual Property 1477. United States Patent Application in preparation.

3. Cheung, S.-C., J.K. Paruchuri and W. Zhang. 2007. Hiding Privacy Information in Surveillance Video. University of Kentucky Intellectual Property 1459. United States Patent Application in preparation.

4. Cheung, S.-C., N. Hu, and T. Nguyen. 2006. Secret Multi-Party Image Processing. University of Kentucky Intellectual Property 1418. United States Patent Pending.

5. Bagherjeiran, C. Harrison, E. Cantu-Paz, S.-C. Cheung, A. Gezahegne, N.-A. Tang, C. Kamath, C. Baldwin and I. Fodor. 2005. Sapphire-GAT Release version 1.0. Lawrence Livermore National Laboratory Invention IL# CP0108.

6. Cheung, S.-C. and C. Kamath. 2005. Detection of Moving Objects In A Video. Lawrence Livermore National Laboratory Invention IL#11330. United States Patent Pending.

7. Cheung, S.-C., D. Drizen, and P. Haskell. 2001. Video postfiltering with motion-compensated temporal filtering and/or spatial-adaptive filtering. United States Patent 6,178,205.

8. Neff, R., A. Zakhor, and S.-C. Cheung. 1998. *Matching-Pursuit Video Coding System.* Office of Technology Licensing, University of California, Berkeley. UCB Case No.: B96-009

Publications

Peer-reviewed Journal Articles (accepted or appeared)

1. Cheung, S.-C., D. Kundur and A. Senior. 2009. Enhancing Privacy Protection in Multimedia Systems. **EURASIP Journal on Information Security**, Volume 2009, Article ID 710919. http://downloads.hindawi.com/journals/is/2009/710919.pdf

2. Parachuri, J., S.-C. Cheung and M. Hail. 2009. Video data-hiding for managing privacy information in surveillance systems. **EURASIP Journal on Information Security,** Volume 2009, Article 236139. http://downloads.hindawi.com/journals/is/2009/236139.pdf

3. S. Yee, Y. Lou, J. Zhao and S.-C. Cheung. 2009. Anonymous Biometric Access Control. **EURASIP Journal on Information Security,** Volume 2009, Article 865259. http://downloads.hindawi.com/journals/is/2009/865259.pdf

4. M., V. Venkatesh, S.-C. Cheung and J. Zhao. 2009. Efficient Object-Based Video Inpainting. In **Pattern Recognition Letter, Special Issue on Video-based Object and Event Analysis,** Volume 30, Issue 2, January 2009, pp. 168-179. http://dx.doi.org/10.1016/j.patrec.2008.03.011

5. Nguyen, K., T. Nguyen and S.-C. Cheung. 2009. Video Streaming with Network Coding. In **Journal of Signal Processing Systems**, DOI: 10.1007/s11265-009-0342-7, February 2009. http://www.vis.uky.edu/~cheung/doc/jsps08.pdf

6. Zhao, J., S.-C. Cheung and T. Nguyen. 2008. Optimal Camera Network Configurations for Visual Tagging. In **IEEE Journal on Selected Topics in Signal Processing: special issue on distributed processing in vision networks,** Volume 2, Number 4, August 2008, pp. 464-479. http://www.vis.uky.edu/~cheung/doc/jstsp08v3.pdf

7. Tullimas, S., T. Nguyen, R. Edgecomb, S.-C. Cheung. 2008. Multimedia Streaming Using Multiple TCP Connections. In **ACM Transactions on Multimedia Computing, Communications and Applications** Volume 4, Issue 2, May 2008, pp. 12:1-12:20. http://www.vis.uky.edu/~cheung/doc/tomccap08.pdf

8. Nguyen, T., K. Kolazhi, R. Kamath, S.-C. Cheung, D. Tran. 2008. Efficient Multimedia Distribution in Source Constraint Networks. In **IEEE Transactions on Multimedia**, Volume 10, Issue 3, April 2008, pp. 523-537. http://www.vis.uky.edu/~cheung/doc/multimedia07.pdf

9. Cheung, S.-C. and T. Nguyen. 2007. Secure Signal Processing between Distrusted Network Terminals. **EURASIP Journal on Information Security, special issue on signal processing in the Encrypted Domain.** Volume 2007 (2007), Article ID 51368. http://www.hindawi.com/GetArticle.aspx?doi=10.1155/2007/51368

10. Cheung, S.-C. and C. Kamath. 2005. Robust Background Subtraction With Foreground Validation for Urban Traffic Video. In **EURASIP Journal of Applied Signal Processing**, New York, NY: Hindawi Publishing Co., Volume 14, pp. 1-11, August 2005. http://www.vis.uky.edu/~cheung/doc/eurasip05.pdf

11. Cheung, S.-C. and A. Zakhor. 2005. Fast similarity search and clustering of video sequences on the world-wide-web. In **IEEE Transactions on Multimedia**. Piscataway, NJ:IEEE. 7(3):524-538. http://www.vis.uky.edu/~cheung/doc/mm2004.pdf

12. Cheung, S.-C. and A. Zakhor. 2003. Efficient video similarity measurement with video signature. In **IEEE Transactions on Circuits, and Systems for Video Technology**. Piscataway. NJ:IEEE. 13 (1):59-74. http://www.vis.uky.edu/~cheung/doc/csvt03.pdf

Peer-reviewed Book Chapter

13. Zhao, J., S.-C. Cheung and T. Nguyen. 2009. Camera Network Configuration and its application in Privacy-protected Video Surveillance. To appear in **Multi-Camera Networks: Concepts and Applications**, edited by H. Aghajan and A. Cavallaro, Elsevier Science and Technology Book Group, 2009. http://www.vis.uky.edu/~cheung/doc/camera_network_chapter.pdf

14. Venkatesh, M. V., S.-C. Cheung, J. Paruchuri, J. Zhao and T. Nguyen. 2009. Protecting and Managing Privacy Information In Video Surveillance Systems. To appear in **Protecting Privacy in Video Surveillance**, edited by Andrew Senior, Springer, 2009. http://www.vis.uky.edu/~cheung/doc/privacy_chapter.pdf

15. Kamath, C., E. Cantu-Puz, S.-C. Cheung, I. K. Fodor, and N. A. Tang. 2005 Experiences in mining data from computer simulations. In **Next Generation of Data-Mining Applications**, edited by M. Kantardzic and J. Zurada, Wiley-IEEE Press pp. 211-233, March 2005. http://www.vis.uky.edu/~cheung/doc/sbor_book.pdf

16. Cheung, S.-C. and A. Zakhor. 2003. Efficient video similarity measurement with video signature. Chapter 28 of **Handbook of Video Databases: Design and Applications**, edited by B. Furht and O. Marques. CRC Press.

Peer-reviewed Conference Proceeding Articles

17. M., V. Venkatesh and S.-C. Cheung. 2010. Eye Tracking based Perceptual Image Inpainting Quality Analysis. Accepted to **IEEE International Conference on Image Processing (ICIP10**), September 26-29, 2010. http://www.vis.uky.edu/~cheung/doc/icip10.pdf

18. Luo, Y., S. Ye and S.-C. Cheung. 2010. Anonymous Subject Identification in Privacy-aware Video Surveillance. Accepted to **IEEE International Conference on Multimedia Expo (ICME 10)**, July 19-23, 2010. **(Invited Paper)** http://www.vis.uky.edu/~cheung/doc/icme10.pdf

19. Huang, X., J. Gao, R. Yang and S.-C. Cheung. 2009. Manifold Estimation in View-based Feature Space for Face Synthesis Across Pose. Accepted to **The Ninth Asian Conference on Computer Vision (ACCV 200**9). http://www.vis.uky.edu/~cheung/doc/accv09.pdf

20. Zhao, J., and S.-C. Cheung. 2009. Human Segmentation by Fusing Visible-light and Thermal Imaginary. **Proceedings of the Ninth IEEE International Workshop on Video Surveillance at IEEE International Conference on Computer Vision (ICCV 2009)**, Sept. 27 – Oct. 4, 2009, pp. 1185-1192. http://www.vis.uky.edu/~cheung/doc/iccv09.pdf

21. Luo, Y., S.-C. Cheung and S. Ye. 2009. Anonymous Biometric Access Control Based on Homomorphic Encryption. **Proceedings of the IEEE International Conference on Multimedia Expo (ICME 09)**, June 28- July 3, 2009, pp. 1046-1049. http://www.vis.uky.edu/~cheung/doc/icme09.pdf

22. M., V. Venkatesh, J. Zhao, L. Profitt and S.-C. Cheung. 2009. Audio-visual Privacy Protection for Video Conference. **Proceedings of the IEEE International Conference on Multimedia Expo (ICME 09)**, June 28 - July 2, 2009, pp. 1574-1575 http://www.vis.uky.edu/~cheung/doc/icme09_workshop.pdf

23. Zhao, J. and S.-C. Cheung. 2009. Optimal Visual Sensor Planning. **Proceedings of IEEE International Symposium on Circuits and Systems (ISCAS 09)**, May 22-24, 2009, pp. 165-168. http://www.vis.uky.edu/~cheung/doc/iscas09_camera.pdf

24. Paruchuri, J., S.-C. Cheung and T. Nguyen. 2008. Managing Privacy Data In Pervasive Camera Networks. **Proceedings of IEEE International Conference on Image Processing (ICIP 08)**, October 12-15, 2008, pp. 1676-1679. http://www.vis.uky.edu/~cheung/doc/icip08.pdf. **(Invited Paper)**

25. Paruchuri, J. and S.-C. Cheung. 2008. Joint Optimization of Data Hiding and Video Compression. In **IEEE International Symposium on Circuits and Systems (ISCAS 08)**, May 18-21, Seattle, WA, pp. 3021-3024. http://www.vis.uky.edu/~cheung/doc/iscas08.pdf

26. Zhao, J. and S.-C. Cheung. 2007. Multi-Camera Surveillance with Visual Tagging and Generic Camera Placement. In the **Proceedings of the ACM/IEEE International Conference on Distributed Smart Camera (ICDSC 07)**, Sept. 25-28, 2007, p. 259-266. http://www.vis.uky.edu/~cheung/doc/icdsc07.pdf.

27. Nguyen, T., K. Nguyen and S.-C. Cheung. 2007. Peer-to-Peer Streaming with Hierarchical Network Coding. In **IEEE International Conference on Multimedia Expo (ICME 07)**, July 2-5, pages 396-399. http://www.vis.uky.edu/~cheung/doc/icme07.pdf

28. Chaudhari, J., S.-C. Cheung and M. V. Venkatesh. 2007. Privacy Protection for Lifelog Video. In **IEEE Signal Processing Society SAFE 2007: Workshop on Signal Processing Applications for Public Security and Forensics (SAFE 2007)**, April 11-13, pages 1-5. http://www.vis.uky.edu/~cheung/doc/safe07.pdf

29. Nan, H. and S.-C. Cheung, and T. Nguyen. 2007. A New Security Model for Secure Thresholding. In **IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2007)**, April 15-20, Volume II, pages 273-276. http://www.vis.uky.edu/~cheung/doc/icassp07.pdf

30. Cheung, S.-C., J. Zhao and M. V. Venkatesh. 2006. Efficient Object-based Video Inpainting. In **IEEE International Conference on Image Processing (ICIP 2006)**, October 8-11, pages 705-708. http://www.vis.uky.edu/~cheung/doc/icip06A.pdf

31. Hu, Nan, S.-C. Cheung and T. Nguyen. 2006. Secure Image Filtering. In **IEEE International Conference on Image Processing ICIP 2006**, pages 1553-1556. http://www.vis.uky.edu/~cheung/doc/icip06B.pdf

32. M. V. Venkatesh and S.-C. Cheung. 2006. Symmetric Shape Completion Under Severe Occlusions. In **IEEE International Conference on Image Processing (ICIP 2006)**, October 8-11, pages 709-712. http://www.vis.uky.edu/~cheung/doc/icip06C.pdf **(Invited Paper)**

33. Nguyen, T., S.-C. Cheung and D. Tran. 2006. Efficient Video Dissemination in Structured P2P Networks. In **IEEE International Conference on Multimedia Expo, (ICME 2006)**, July 9-12, pages 1673-1676. http://www.vis.uky.edu/~cheung/doc/icme06.pdf

34. Nguyen T., D. Tran and S.-C. Cheung. 2005. Efficient P2P Data Dissemination in a Homogeneous Capacity Network Using Structured Mesh. In Proceedings of **International Conference on Multimedia Services Access Networks (MSAN 05)**, June 13-15 2005, Orlando Fl. Piscataway, NJ:IEEE: 73-77. **Invited Paper.** http://www.vis.uky.edu/~cheung/doc/msan05.pdf **(Invited Paper)**

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