

CURRICULUM VITAE

Carri W. Chan
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EDUCATION

- *Stanford University, Ph.D. in Electrical Engineering*, expected in 2009 (GPA: 4.0/4.0)
Dissertation Topic: Scheduling and Queueing Problems in
Operations Management and Information Technology Services
- *Stanford University, M.S. in Electrical Engineering*, 2006 (GPA: 4.0/4.0)
- *Massachusetts Institute of Technology, B.S. in Electrical Eng.*, 2004 (GPA: 5.0/5.0)

RESEARCH INTERESTS²

Methodologies: Modeling of complex stochastic systems, efficient algorithmic design for queueing systems, dynamic control of stochastic processing systems.

Applications: Health-care operations management, information services, telecommunication networks.

AWARDS AND HONORS

- Stanford Graduate Fellow, *Stanford University*, 2004-2008 (STMicroelectronics sponsor)
- Graduate Research Fellow, *National Science Foundation*, 2006 (honorable mention)

PUBLICATIONS

Journal Papers

1. C. W. Chan, V. F. Farias. Stochastic Depletion Problems: Effective Myopic Policies for a class of Dynamic Optimization Problems. *Mathematics of Operations Research*. (to appear)
2. C. W. Chan, N. Bambos, S. Wee, J. Apostolopoulos. Scheduling Algorithms for Broadcasting Media with Multiple Distortion Measures. *IEEE Transactions on Wireless Communications*. (to appear)
3. A. Dua, C. W. Chan, N. Bambos, J. Apostolopoulos. Channel, Deadline, and Distortion (CD²) Aware Scheduling for Video Streams Over Wireless. *IEEE Transactions on Wireless Communications*. (to appear)
4. C. W. Chan, S. Wee, J. Apostolopoulos. Multiple Distortion Measures for Packetized Scalable Media. *IEEE Transactions on Multimedia*. Vol. 10, No. 8, Dec. 2008, pp. 1671-1686.

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²Please, see also my attached Research and Teaching Statements for more details on my current and evolving interests

PUBLICATIONS (continued)

Peer Reviewed Conference Papers (3 reviewers, typically 30% acceptance rate)

1. C. W. Chan, S. Wee, J. Apostolopoulos. Multiple Distortion Measures for Video with Temporal Scalability. *Proceedings of the IEEE International Conference on Image Processing (ICIP)*, pp. 2056-2059, San Diego, CA, 2008.
2. C. W. Chan, N. Bambos, J. Singh. Wireless Network-Assisted Computing. *Proceedings of the IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, Cannes, France, 2008.
3. C. W. Chan, N. Bambos, S. Wee, J. Apostolopoulos. Wireless Broadcasting to Diverse Users. *Proceedings of the IEEE International Conference on Communications (ICC)*, pp. 377-382, Beijing, China, 2008.
4. C. Chan, N. Bambos, S. Wee, J. Apostolopoulos. Optimal Scheduling of Media Packets with Multiple Distortion Measures. *Proceedings of the IEEE International Conference on Multimedia & Expo (ICME)*, pp. 955-958, Beijing, China, 2007.
5. C. Chan, S. Wee, J. Apostolopoulos. Multiple Distortion Measures for Scalable Streaming with JPEG2000. *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, pp. (II)705-(II)708, Honolulu, HI, 2007.
6. C. Chan, J. Apostolopoulos, Y. Li, N. Bambos. Receiver-based Optimization for Video Delivery over Wireless Links. *Proceedings of the IEEE International Conference on Multimedia & Expo (ICME)*, pp. 861-864, Toronto, ONT, 2006.
7. C. Chan, S. Wee, J. Apostolopoulos. On Optimal Embedded Schedules of JPEG-2000 Packets. *Proceedings of the IEEE International Conference on Image Processing (ICIP)*, pp. 785-788, Atlanta, CA, 2006.
8. F. Baccelli, N. Bambos, C. Chan. Optimal Power, Throughput and Routing for Wireless Link Arrays. *Proceedings of the IEEE Conference on Computer Communications (INFOCOM)*, pp. 1-12, Barcelona, Spain, 2006.
9. A. Markopoulou, Y. Li, C. Chan, N. Bambos. Energy-Efficient Communication in Battery-Constrained Portable Devices. *International Conference on Broadband Communications, Networks, and Systems (Broadnets)*, pp. 408- 417, Boston, MA, 2005.
10. L.A. Poyneer, K. LaFortune, C. Chan. Scene-based Wave-front Sensing for Remote Imaging. *Proceedings of Society of Photo-optical Instrumentation Engineers (SPIE) 5162 Advanced Wavefront Controls*, pp. 91-102, San Diego, CA, 2003.

PRESENTATIONS (beyond those associated with the aforementioned conference papers)

1. Stochastic Depletion Problems: On the Greedy Policy for a Class Of Dynamic Optimization Problems, *INFORMS Annual Meeting*, Washington, DC, 2008.
2. Multimedia Transmission to Diverse Users, *The Chinese University of Hong Kong* (invited seminar), 2008.
3. Stochastic Depletion Problems: A Wireless Broadcasting Example, *Northeastern University* (invited seminar), 2007.

WORK IN PROGRESS

1. C. W. Chan, N. Bambos. *Efficiency of Greedy Schedules for Processing of Jobs with Decaying Value*. Investigation of the “efficiency gap” between greedy and optimal stochastic scheduling policies of jobs with values that decay over time; applications in patient scheduling, where delays cause deterioration in patient health and also result in reduced benefit from treatment.
2. C. W. Chan, N. Bambos. *On Stability of Queues with Delay-Dependent Job Processing Times*. Investigation of sample-path dynamics of queueing systems, where job service times depend on job waiting times; analysis and characterization of the various stability modes; applications in health-care management, where delays cause deterioration in patient health and, subsequently, the patient requires increased time for hospitalization and treatment.

TEACHING EXPERIENCE

I have been a teaching assistant for the following classes at Stanford University:

- *Introduction to Computer Networks*, EE284. Autumn 2008.
- *Network Architectures and Performance Engineering*, EE384S. Spring 2008, 2009.
- *Queueing Systems and Processing Networks*, MS&E335. Autumn 2007.

WORK EXPERIENCE

- *Hewlett-Packard Laboratories, Palo Alto, CA* June-Sept. 2005 & 2006
Researcher
Developed new performance evaluation framework for scheduling algorithms of multimedia; introduced novel media packet scheduling algorithm, achieving multiple dB gains over state-of-the-art. Designed dynamic programming algorithm to compute optimal schedules of JPEG-2000 images; developed a novel efficient greedy algorithm to generate embedded schedules which achieves near optimal performance.
- *Lawrence Livermore National Laboratory, Livermore, CA* June-Aug. 2003
Summer Intern, Adaptive Optics group
Developed and analyzed motion detection algorithms for images of extremely low resolution, necessary for determining phase aberrations causing image blurring; designed novel algorithm using pixel-by-pixel image statistics to identify motion.
- *Palo Alto Research Center, Palo Alto, CA* June-Aug. 2002
Summer Intern, Modular Robotic Lab
Devised vision-based tracking system for modular robots, using small digital camera and laser optics; developed and implemented new algorithm to track objects for robot to explore old mines too dangerous for people to enter.
- *MITRE Corporation, Bedford, MA* June-Aug. 2000 & 2001
Technical Summer Intern, Signal Processing Department
Implemented spreading sequence generator, used in civilian and military Global Positioning System (GPS) to verify satellite identifications; designed civilian spreading sequence in VHDL; planned signal flow and layout of hardware; resulting circuit was used in GPS receivers for satellite verification.

PROFESSIONAL ACTIVITIES

- *Technical Reviewer*: Manufacturing & Service Operations Management, IEEE Transactions on Wireless Communications, IEEE Transactions on Mobile Computing, IEEE Transactions on Multimedia, IEEE Transactions on Circuits and Systems for Video Technology, IEEE ICME, IEEE Packet Video Workshop.
- *Student Member*: INFORMS, IEEE.

REFERENCES

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