Nicholas Mastronarde

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EDUCATION:

2006-Present:	University of California, Los Angeles (UCLA) Advisor: Prof. Mihaela van der Schaar Ph.D. (first year department fellowship, dissertation year fellowship) Electrical Engineering.
2005-06:	University of California, Davis (UC Davis) Advisor: Prof. Mihaela van der Schaar M.S. (department fellowship) Electrical Engineering.
2001-05:	University of California, Davis (UC Davis) B.S. (Highest Honors, Department Citation) Electrical Engineering.

PUBLICATIONS:

JOURNAL PAPERS

[1] **N. Mastronarde**, F. Verde, D. Darsena, A. Scaglione, and M. van der Schaar, "Sailing good radio waves and transmitting important bits: a cross-layer cognitive approach to cooperative video transmission," in review.

[2] **N. Mastronarde** and M. van der Schar, "Online reinforcement learning for dynamic multimedia systems," *IEEE Trans. on Image Processing*, vol. 19, no. 2, pp. 290-305, Feb. 2010.

[3] **N. Mastronarde** and M. van der Schaar, "Designing autonomous layered video coders," *Elsevier Journal Signal Processing: Image Communication – Special Issue on Scalable Coded Media Beyond Compression*, vol. 24, no. 6, pp. 417-436, July 2009.

[4] **N. Mastronarde** and M. van der Schaar, "Towards a General Framework for Cross-Layer Decision Making in Multimedia Systems," *IEEE Trans. on Circuits and Systems for Video Technology*, vol. 19, no. 5, pp. 719-732, May 2009.

[5] **N. Mastronarde** and M. van der Schaar, "Automated bidding for media services at the edge of a content delivery network," *IEEE Trans. on Multimedia*, vol. 11, no. 3, pp. 543-555, Apr. 2009.

[6] **N. Mastronarde** and M. van der Schaar, "A bargaining theoretic approach to quality-fair system resource allocation for multiple decoding tasks," *IEEE Trans. Circuits and Systems for Video Technology*, vol. 18, no. 3, Mar. 2008.

[7] **N. Mastronarde** and M. van der Schaar, "A queuing-theoretic approach to task scheduling and processor selection for video decoding applications," *IEEE Trans. Multimedia*, vol. 8, no. 7, pp. 1493-1507, Nov. 2007.

[8] **N. Mastronarde**, D. S. Turaga, and M. van der Schaar. "Collaborative resource exchanges for peer-to-peer video streaming over wireless mesh networks," *IEEE J. on Select. Areas in Communications Peer-to-peer Communications and Applications*, vol. 25, no. 1, pp. 108-118, Jan. 2007.

[9] Y. Andreopoulos, **N. Mastronarde**, and M. van der Schaar, "Cross-layer optimized video streaming over wireless multi-hop mesh networks," *IEEE J. on Select. Areas in Communications Multi-Hop Wireless Mesh Networks*, vol. 24, no. 11, pp. 2104-2115, Nov. 2006.

CONFERENCE PAPERS

[1] **N. Mastronarde** and M. van der Schaar, "Stochastically optimal transmission scheduling and power management for wireless video," in review.

[2] **N. Mastronarde**, M. van der Schaar, A. Scaglione, F. Verde, and D. Darsena, "Sailing good radio waves and transmitting important bits: relay cooperation in wireless video transmission," *ICASSP 2010*, Mar. 14-19, 2010.

[3] **N. Mastronarde** and M. van der Schaar, "A new approach to cross-layer optimization of multimedia systems," *ICASSP 2010*, Mar. 14-19, 2010.

[4] **N. Mastronarde** and M. van der Schaar, "Online reinforcement learning for multimedia buffer control," *ICASSP 2010*, Mar. 14-19, 2010.

[5] **N. Mastronarde** and M. van der Schaar, "Online layered learning for cross-layer optimization of dynamic multimedia systems," ACM Multimedia Systems, Feb. 22-23, 2010.

[6] **N. Mastronarde** and M. van der Schaar, "Autonomous decision making in layered and reconfigurable video coders," *Asilomar Conference on Signals, Systems, and Computers*, Nov. 2009.

[7] **N. Mastronarde** and M. van der Schaar, "A scalable complexity specification for video applications," *IEEE International Conference on Image Processing* (*ICIP*), Oct. 2008.

[8] **N. Mastronarde**, D. S. Turaga, and M. van der Schaar, "Collaborative resource management for video over wireless multi-hop mesh networks," *ICIP*, 2006.

[9] **N. Mastronarde**, Y. Andreopoulos, M. van der Schaar, D. Krishnaswamy and J. Vicente, "Cross-layer video streaming over 802.11e-enabled wireless mesh networks." *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP),* vol. 5, pp. V-433- V-436, 14-19, May 2006.

BOOK CHAPTER:

[1] Y. Andreopoulos, **N. Mastronarde**, M. van der Schaar, "Cross-layer Optimized Video Streaming over Wireless Multi-hop Mesh Networks," Cambridge University Press 2007, ed. Benny Bing (Georgia Tech).

PATENT:

[1] **N. Mastronarde** and H. Jiang, "Enabling Selective Use of Fractional and Bidirectional Video Motion Estimation," U.S. Patent, filed June 2008.

PRESENTATIONS:

[1] *A new approach to cross-layer optimization of multimedia systems*, IEEE Conference on Acoustics, Speech and Signal Processing (ICASSP), Mar. 14-19, 2010.

[2] *Online reinforcement learning for multimedia buffer control*, IEEE Conference on Acoustics, Speech and Signal Processing (ICASSP), Mar. 14-19, 2010.

[3] *Online layered learning for cross-layer optimization of dynamic multimedia systems*, ACM Multimedia Systems, Feb. 22-23, 2010.

[4] *Autonomous decision making in layered and reconfigurable video coders*, Asilomar Conference on Signals, Systems, and Computers, Nov. 2009.

[5] *A scalable complexity specification for video applications*, IEEE International Conference on Image Processing (ICIP), Oct. 2008.

TEACHING EXPERIENCE:

Spring 2010: Teaching assistant for an undergraduate course on Digital Signal Processing (EE 113) at UCLA. Prepared homework assignments and exams, held two weekly office hours, and led three weekly discussion sections with approximately 25 students each.

Fall 2009: Teaching assistant for a graduate course on Multimedia Communications and Processing (EE 238) in the Online Master of Science program at UCLA. Prepared homework assignments, held weekly online office hours, and assisted the professor with lecture preparation.

Spring 2009: Teaching assistant for an undergraduate course on Digital Signal Processing (EE 113) at UCLA. Prepared homework assignments and exams, held two weekly office hours, and led two weekly discussion sections with approximately 25 students each.

INTERNSHIPS:

Summer 2010: Graduate Intern at IBM Research Watson Lab in the Exploratory Stream Analytics group, June – Sept. 2010.

Summer 2007: Graduate Student Intern at Intel Corporation working in the Graphics Architecture Team, June – Sept. 2007.

ACTIVITIES:

2007:	Student organizer for the “UCLA Electrical Engineering Workshop on Power-Constrained Multimedia Systems: Theory, Algorithms, Platforms, Middleware,” Feb. 2, 2007.
2005:	Invited presenter at Intel’s IT Innovation and Research Open House 2005.
2004-2005:	Tau Beta Pi Engineering Honors Society, UC Davis.