

KRISTI A. MORGANSEN

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Department of Aeronautics and Astronautics
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PROFESSIONAL PREPARATION

Harvard University, Cambridge, MA

Doctor of Philosophy, Engineering Sciences, 1999

Master of Science, Applied Mathematics, 1996

Boston University, Boston, MA,

Master of Science, Mechanical Engineering, 1994

Bachelor of Science, Mechanical Engineering (summa cum laude), 1993

EMPLOYMENT HISTORY

University of Washington, Seattle, WA

Associate Professor, Department of Aeronautics & Astronautics 2009-present

Adjunct Associate Professor, Department of Electrical Engineering 2009-present

Assistant Professor, Department of Aeronautics & Astronautics 2002-2009

Adjunct Assistant Professor, Department of Electrical Engineering 2002-2009

California Institute of Technology, Pasadena, CA

Senior Research Fellow, Control and Dynamical Systems and Mechanical Engineering 2001-2002

Postdoctoral Scholar, Control and Dynamical Systems and Mechanical Engineering 1999-2001

Course Lecturer, Control and Dynamical Systems 2000

Harvard University, Cambridge, MA

Graduate Research Assistant, Division of Engineering and Applied Sciences 1994-1999

Oak Ridge National Laboratory, Oak Ridge, TN

Graduate Research Assistant summers 1993, 1994, 1995

Boston University, Boston, MA

Graduate Research Assistant, Aerospace and Mechanical Engineering 1993-1994

AWARDS

O. Hugo Schuck Award for best paper in the theory category for the 2009 *American Control Conference*.

Senior Member, 2006, Institute of Electrical and Electronic Engineers.

National Science Foundation CAREER Award, 2003-2009, National Science Foundation.

Clare Boothe Luce Assistant Professor of Engineering, 2002-2007, The Luce Foundation.

JOURNAL PUBLICATIONS (PAST THREE YEARS)

1. E. Lalish and **K.A. Morgansen**, "Distributed reactive collision avoidance," *Autonomous Robots*, special issue, conditionally accepted.
2. C. Woodruff, L. Vu, **K. A. Morgansen** and D. Tomlin, "Deterministic modeling and evaluation of decision-making dynamics in sequential two-alternative forced choice tasks," *Proceedings of the IEEE, special issue on Interaction Dynamics at the Interface of Humans and Smart Machines*, accepted.
3. N. Powel and **K. A. Morgansen**, "Communication-based performance bounds in nonlinear coordinated control," *International Journal of Robust and Nonlinear Control*, special issue, **21**(12):1410-1420, August 2011.
4. L. Vu and **K. A. Morgansen**, "Stability of time-delay feedback switched linear systems," *IEEE Transactions on Automatic Control*, **55**(10):2385-2389, October 2010.
5. R. Pagliari, S. Kirti, **K. A. Morgansen**, T. Javidi and A. Scaglione, "A simple and scalable algorithm for alignment in broadcast networks," *IEEE Journal on Selected Areas in Communication*, **28**(7):1190-1199, September 2010.
6. B. I. Triplett, D. J. Klein and **K. A. Morgansen**, "Cooperative estimation for coordinated target tracking in a cluttered environment," *ACM/Springer Mobile Networks and Applications Journal (MONET)*, (invited—special issue), **14**(3):336-349, June 2009.
7. D. J. Klein, P. Lee, **K. A. Morgansen** and T. Javidi, "Integration of communication and control using discrete time Kuramoto models for multivehicle coordination over broadcast networks," *IEEE Journal on Selected Areas in Communication* **26**(4):695-705, May 2008.

CONFERENCE PUBLICATIONS (REFEREED, PAST THREE YEARS)

1. N. D. Powel and **K. A. Morgansen**, "Multiserver queueing for supervisory control of autonomous vehicles," *American Control Conference*, in review, 2012.
2. B. Hinson and **K. A. Morgansen**, "Flowfield estimation in the wake of a pitching and heaving airfoil," *American Control Conference*, in review, 2012.
3. L. Techy, **K. A. Morgansen** and C. Woolsey, "Long-baseline acoustic localization of the Seaglider underwater glider," in *Proceedings of the American Control Conference*, to appear, June 2011.
4. C. Woodruff, L. Vu, **K. A. Morgansen** and D. Tomlin, "Modeling and evaluation of decision-making dynamics in sequential two-alternative forced choice tasks," in *Proceedings of the 2010 IEEE Conference on Decision and Control*, December 2010.
5. A. P. Melander, N. D. Powel, E. Lalish, **K. A. Morgansen**, J. S. Jang and J. Vian, "Implementation of deconfliction in multivehicle autonomous systems," in the 27th *International Congress of the Aeronautical Sciences*, Invited Paper, September 2010.
6. L. Techy, C. Woolsey and **K. A. Morgansen**, "Planar path following for flight vehicles in wind with turn rate and acceleration bounds," in the *IEEE International Conference on Robotics and Automation*, May 2010.
7. D. J. Klein, E. Lalish and **K. A. Morgansen**, "On controlled sinusoidal coupling," in *Proceedings of the American Control Conference*, June 2009.
8. L. Vu and **K. A. Morgansen**, "Stability of feedback switched systems with state and switching delay," in *Proceedings of the American Control Conference*, June 2009 (**recipient of the O. Hugo Schuck award for best paper in the theory category**).
9. L. Vu and **K. A. Morgansen**, "Modeling and analysis of dynamic decision making in sequential two-choice tasks," in *Proceedings of the IEEE Conference on Decision and Control*, December 2008.
10. E. Lalish and **K. A. Morgansen**, "Decentralized reactive collision avoidance for multivehicle systems," in the *IEEE Conference on Decision and Control*, December 2008.
11. D. J. Klein and **K. A. Morgansen**, "Set stability of phase-coupled agents in discrete time," in *Proceedings of the American Control Conference*, June 2008.
12. E. Lalish, **K. A. Morgansen** and T. Tsukamaki, "Decentralized reactive collision avoidance for multiple unicycle-type vehicles," in *Proceedings of the American Control Conference*, June 2008.
13. D. J. Klein, P. K. Bettale, B. I. Triplett and **K. A. Morgansen**, "Autonomous underwater multivehicle control with limited communication: Theory and experiment," in *Proceedings of the Second IFAC Workshop on Navigation, Guidance and Control of Underwater Vehicles*, April 2008.

PROFESSIONAL SOCIETY SERVICE (PAST THREE YEARS)

Amer. Control Conf., Publications Chair (2012), *IEEE Conf. Decision and Control*, Student Activities Chair (2010), IEEE Control System Society Technical Committee on Nonlinear Control (2009-present), *Robotics Science & Systems*, Program Committee (2009, 2011), *Amer. Control Conf.*, Local Arrangements Chair (2008),

COLLABORATORS (PAST 48 MONTHS)

J. Baillieul (Boston U.), C. Belta (Boston U.), M. Betke (Boston U.), F. Bullo (UCSB), D. Castanon (Boston U.), J. D. Cohen (Princeton), T. Daniel (UW), D. Grunbaum (UW), T. Hedrick (UNCCH), P. Holmes (Princeton), T. Horiuchi (UMD), J. S. Humbert (UMD), T. Javidi (UCSD), T. Kunz (Boston U.), N. Leonard (Princeton), Y. Matsuoka (UW), I. Paschalidis (Boston U.), D. Prentice (Princeton), A. Scaglione (Cornell), J. Vagners (UW), C. Woolsey (VA Tech).

GRADUATE AND POST-GRADUATE ADVISORS AND ADVISEES:

Graduate and post-graduate advisors to Kristi A. Morgansen

Ph.D.: Prof. Roger Brockett, Harvard University;

Postgraduate: Prof. Joel Burdick, Caltech and Prof. Richard Murray, Caltech

Graduate students advised:

Past: Esther Anderson (MS AA), Patrick Bettale (MS EE), JaeDong Hwang (MS AA), Daniel J. Klein (PhD AA), Kyle Krogh (MS AA), Emmett Lalish (PhD AA), Brian Massey (MS AA), Andrew Melander (MS AA), Kudah Mushambi (MS AA), Randall Svac (MS AA), Benjamin I. Triplett (PhD AA).

Current: Atiye Alaeddini (PhD AA), Jared Becker (MS AA), Elizabeth Boardman (MS AA), Brian Hinson (PhD AA), Nathan Powel (PhD AA), Jake Quenzer (MS AA), Caleb Woodruff (PhD AA).

Postgraduate scholars advised:

Past: Dr. Christopher Lum, Dr. Anawat Pongpunwattana, Dr. Linh Vu. **Current:** Dr. Laszlo Techy.