Ross Peter Anderson

CONTACT INFORMATION	Mail Stop SOEGrad Department of Statistics and Applied Math University of California, Santa Cruz 1156 High Street Santa Cruz, CA 95064 USA	*Office:* Baskin 350D *Phone:* 386-212-0519 *E-mail:* anderson@soe.ucsc.edu *WWW:* http://users.soe.ucsc.edu/∼anderson

RESEARCH
INTERESTS

Stochastic optimal control, multi-agent systems, collective dynamics, stochastic processes, nonlinear control, swarm robotics, bio-inspired control

EDUCATION

University of California, Santa Cruz, Santa Cruz, California, USA

Ph.D. candidate, Applied Mathematics & Statistics (defense: January 2014)
- Dissertation Topic: "Uncertainty-Anticipating Stochastic Optimal Feedback
  Control of Autonomous Vehicle Models"
- Adviser: Dejan Milutinović

Cornell University, Ithaca, New York, USA

B.A. Physics, May, 2008
- Undergraduate Research Adviser: Keith Schwab

HONORS AND
AWARDS

Best Student Paper, International Symposium on Distributed Autonomous Robotic Systems, 2012.

Travel Award, International Symposium on Distributed Autonomous Robotic Systems, 2012.

National Science Foundation/Vetenskapsrådet Nordic Research Opportunity (Research visit to Automatic Control Lab, KTH Royal Institute of Technology, Stockholm, Sweden), 2012.

Travel Award, Dynamic Systems and Control Conference, 2011.

National Science Foundation Graduate Research Fellowship, 2010 - 2013.

UC Santa Cruz Chancellor's Fellowship, 2009.

EMPLOYMENT
HISTORY

Lockheed Martin Corporation, Moorestown, New Jersey, USA   July 2008 - March 2009

Associate Engineer, Mission Systems & Sensors (MS2)

Creation of new algorithms for intercepting exo-atmospheric ballistic missiles with sea-based weapons systems. Developed stochastic simulations to analyze the resulting system performance against threat models.

PUBLICATIONS

Journal Articles

Anderson, R.P. and Milutinović, D., "Stochastic optimal enhancement of distributed formation control using Kalman smoothers," Accepted for publication in *Robotica*.

Anderson, R.P. and Milutinović, D., "A Stochastic approach to Dubins vehicle tracking problems," (under revision).

Anderson, R.P., Milutinović, D., and Dimarogonas, D. V., "Self-Triggered p-moment stability for continuous stochastic state-feedback controlled systems," (submitted).

Anderson, R.P., Bakolas, E., Milutinović, D., and Tsiotras, P., "Optimal feedback guidance of a small aerial vehicle in the presence of stochastic wind," *AIAA Journal of Guidance, Control, and*

Dynamics 36(4), (2013), pp. 975-985.

Anderson, R.P. and Milutinović, D. "An Approach to optimization of airport taxiway scheduling and traversal under uncertainty." *Proceedings of the Institution of Mechanical Engineers, Part G: Journal of Aerospace Engineering* 227(2), (2013), pp. 273-284.

Book Chapters

Anderson, R.P. and Milutinović, D., "Kalman smoothing for distributed optimal feedback control of unicycle formations," In *Redundancy in Robot Manipulators and Multi-Robot Systems*, D. Milutinović and J. Rosen (Eds.), LMEE 57, pp. 145-166. Springer-Verlag, Berlin (2012).

Conference Proceedings

Anderson, R.P. and Milutinović, D., "The Dubins traveling salesperson problem with stochastic dynamics," In *Proceedings of the ASME Dynamic Systems and Control Conference (DSCC)*, Palo Alto, California, (October 2013).

Anderson, R.P. and Milutinović, D., "Anticipating stochastic observation loss during optimal target tracking by a small aerial vehicle," In *Proceedings of the 2013 International Conference on Unmanned Aircraft Systems (ICUAS)*, Atlanta, Georgia (May 2013).

Anderson, R.P., Milutinović, D., and Dimarogonas, D.V., "Self-Triggered stabilization of continuous stochastic state-feedback controlled systems," In *Proceedings of the European Control Conference (ECC)*, Zürich, Switzerland (July 2013).

Anderson, R.P. and Milutinović, D., "Distributed path integral feedback control based on Kalman smoothing for unicycle formations," In *Proceedings of the American Control Conference (ACC)*, Washington, D.C. (June 2013).

Anderson, R.P., Bakolas, E., Milutinović, D., and Tsiotras, P., "The Markov-Dubins problem in the presence of a stochastic drift field," In *Proceedings of the IEEE Conference on Decision and Control (CDC)*, Maui, Hawaii (December 2012).

Anderson, R.P. and Milutinović, D., "A Stochastic optimal enhancement of feedback control for unicycle formations," In *Proceedings of the International Symposium on Distributed Autonomous Robotic Systems (DARS)*, Baltimore, Maryland (November 2012) [**Awarded Best Student Paper**].

Anderson, R.P., Dinolov, G., Milutinović, D., and Moore, A., "Maximlly-informative regional ocean modeling system (ROMS) navigation of an AUV in uncertain ocean currents," In *Proceedings of the 5th ASME Dynamic Systems and Control Conference*, Fort Lauderdale, Florida (October–November 2012).

Anderson, R.P. and Milutinović, D. 2011. "Dubins vehicle tracking of a target with unpredictable trajectory." In *Proceedings of the 4th ASME Dynamic Systems and Control Conference*, Arlington, Virginia (October 2011).

Anderson, R.P. and Milutinović, D. 2011. "A Stochastic approach to Dubins feedback control for target tracking." In *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems*, San Francisco, California (September 2011).

Anderson, R.P. and Milutinović, D. 2010. "Optimization of taxiway traversal at congested airports," In *Proceedings of the 11th AIAA Aviation Technology, Integration, and Operation Conference*, Fort Worth, Texas (September 2010).

INVITED TALKS	Saab Sensis Corporation Technical Seminar, July 2010.
	NASA Ames AFH Seminar, June 2010.
PROFESSIONAL ACTIVITIES	Student Member, IEEE, 2011-present.
	Student Member, ASME, 2011-present.
TEACHING	Guest Lecturer for AMS 218: Estimation and Introduction to Control of Stochastic Processes, Fall 2011 & 2012.
	Guest Lecturer for AMS 114/214: Introduction to Dynamical Systems/Applied Dynamical Systems, Spring 2012 & Winter 2013.
	Teaching Assistant for AMS 11B: Mathematical Methods for Economists II, Spring 2013.
	Teaching Assistant for AMS 147: Computation Methods and Applications, Winter 2011.
GRADUATE COURSEWORK	AMS 205A: Mathematical Statistics
	AMS 206B: Intermediate Bayesian Inference
	AMS 211: Fundamentals of Applied Mathematics
	AMS 212A: Applied Mathematical Methods I
	AMS 212B: Applied Mathematical Methods II
	AMS 213: Numerical Solutions of Differential Equations
	AMS 214: Applied Dynamical Systems
	AMS 215: Stochastic Modeling in Biology
	AMS 218: Estimation and Introduction to Control of Stochastic Processes
	AMS 241: Bayesian Nonparametric Methods (audit)
	AMS 263: Stochastic Processes
MISCELLANEOUS	USA and UK citizenship
	Fluent: Matlab, LaTeX, html, css, javascript. Profient: C/C++, shell scripting, French

Last Updated: October 26, 2013