Anurag Ganguli

11150 W. Olympic Blvd
Suite 680
Los Angeles, CA 90064

Phone: (310) 473-1500
Fax: (310) 473-5052
Email: anurag@utopiacompression.com

EDUCATION

Ph.D. in Electrical and Computer Engineering April 2007
University of Illinois at Urbana-Champaign

Bachelor of Technology (B. Tech) in Mechanical Engineering July 2002
Indian Institute of Technology Bombay, India

HONORS AND AWARDS

- DARPA STTR Phase I award (as **Principal Investigator**) on Passive Collision Detection System for UAVs, July 2008 ($100,000)
- USAF SBIR Phase II award (as **co-Principal Investigator**) on Routing Technologies for the Airborne Network, January 2008 ($750,000)
- Best Student Paper Award, American Control Conference, Minneapolis MN, June 2006
- Finalist, Best Student Paper Award, American Control Conference, Portland OR, June 2005
- Carver Research Fellowship, University of Illinois at Urbana-Champaign, August 2002-April 2003
- K. Suryanarain Rao Award for Research in Smart Structures, National Aerospace Laboratory, Bangalore, India, August 2002

ACTIVE RESEARCH INTERESTS

Wireless Ad Hoc and Communication Networks;Sensor Networks;Optimization Theory;Systems and Control Theory; Nonlinear and Nonsmooth Analysis; Cooperative Control; Distributed Robotics

POSITIONS

- Senior Research and Development Scientist, UtopiaCompression Corporation, Los Angeles, CA (Jun 2007 - present)
- Visiting Researcher, Center for Control, Dynamical Systems, and Computation (CCDC), University of California, Santa Barbara, CA (Jan 2005 - May 2007)
- Research Assistant, Coordinated Science Laboratory, University of Illinois, Urbana, IL (Aug 2002 - May 2007)

RESEARCH DESCRIPTION

- **Routing Technologies for the Airborne Network** (Phase II SBIR program from the USAF at UtopiaCompression in collaboration with UCLA - as **co-Principal Investigator**)
- **Topology Control for the Airborne Network** (Phase I SBIR program from the USAF at UtopiaCompression)

- **Thin Layer for Ad Hoc Networks** (Phase I STTR program from the ONR at UtopiaCompression in collaboration with UCLA)
- **Passive Ranging for the UAV Sense and Avoid Program** (Phase II SBIR from the USAF at UtopiaCompression - as **co-Principal Investigator**)
- **Passive Collision Detection for UAV Sense and Avoid Systems** (Phase I STTR from DARPA at UtopiaCompression in collaboration with UCLA - as **Principal Investigator**)
- **Wearable Physiological Monitoring Device for First Responders** (Phase I SBIR from DHS at UtopiaCompression in collaboration with UCLA)
- **Autonomous Detection and Collision Avoidance for USVs** (Phase II SBIR program from NASA at UtopiaCompression)
- **Distributed cooperative control for mobile sensor networks** (Doctoral research at UIUC and UCSB)

PUBLICATIONS
Journal papers and book chapters

[J1] A. Ganguli, F. Bullo, and J. Cortés. Multi-agent deployment in orthogonal environments with visibility sensors. *Automatica*, 2008. Submitted

[J2] A. Ganguli, J. Cortés, and F. Bullo. Distributed coverage of nonconvex environments. In V. Saligrama, editor, *Networked Sensing Information and Control (Proceedings of the NSF Workshop on Future Directions in Systems Research for Networked Sensing, May 2006, Boston, MA)*, Lecture Notes in Control and Information Sciences, pages 289–305. Springer Verlag, 2007

[J3] A. Ganguli, J. Cortés, and F. Bullo. Multirobot rendezvous with visibility sensors in nonconvex environments. *IEEE Transactions on Robotics*, August 2007. (Submitted Nov 2006) Conditionally Accepted

[J4] A. Ganguli, J. Cortés, and F. Bullo. Maximizing visibility in nonconvex polygons: Nonsmooth analysis and gradient algorithm design. *SIAM Journal on Control and Optimization*, 45(5):1657–1679, 2006

Conference proceedings

[C1] A. Tiwari, A. Ganguli, A. Sampath, N. Krishnamurthy, B. Shen, M. Gerla, and J. Yadegar. Mobility aware routing for the airborne network backbone. In *IEEE MILCOM*, 2008. To appear

[C2] A. Tiwari, A. Ganguli, and A. Sampath. Towards a mission planning toolbox for the airborne network: Optimizing ground coverage under connectivity constraints. In *IEEE Aerospace Conference*, Big Sky, MT, March 2008

[C3] A. Ganguli, J. Cortés, and F. Bullo. Visibility-based multi-agent deployment in orthogonal environments. In *American Control Conference*, pages 3426–3431, New York, July 2007

[C4] K. J. Obermeyer, A. Ganguli, and F. Bullo. Asynchronous distributed searchlight scheduling. In *IEEE Conf. on Decision and Control*, pages 4863–4868, New Orleans, LA, December 2007

[C5] A. Ganguli, J. Cortés, and F. Bullo. Distributed deployment of asynchronous guards in art galleries. In *American Control Conference*, pages 1416–1421, Minneapolis, MN, June 2006

[C6] A. Ganguli, S. Susca, S. Martínez, F. Bullo, and J. Cortés. On collective motion in sensor networks: Sample problems and distributed algorithms. In *IEEE Conf. on Decision and Control and European Control Conference*, pages 4239–4244, Seville, Spain, December 2005

[C7] A. Ganguli, J. Cortés, and F. Bullo. On rendezvous for visually-guided agents in a nonconvex polygon. In *IEEE Conf. on Decision and Control and European Control Conference*, pages 5686–5691, Seville, Spain, December 2005

[C8] A. Ganguli, J. Cortés, and F. Bullo. Maximizing visibility in nonconvex polygons: Nonsmooth analysis and gradient algorithm design. In *American Control Conference*, pages 792–797, Portland, OR, June 2005

[C9] A. Ganguli, S. Jhawar, and P. Seshu. Shape control of curved beams using piezoelectric actuators. In S. Mohan, B. Dattaguru, and S. Gopalakrishnan, editors, *Proceedings of SPIE*, volume 5062, pages 297–304, October 2003

PROFESSIONAL SERVICES

Reviewer: (i) SIAM Journal on Control and Optimization, (ii) IEEE Transactions on Automatic Control, (iii) IEEE Transactions on Robotics, and (iv) American Control Conference 2006-2007, IEEE Conference on Decision and Control 2006-2008, International Federation of Automatic Control World Congress 2008