

# Kooktae Lee

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## Contact Information

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## Research Interests

**IEEE Control Systems Society Student Travel Award**, IEEE American Control Conference (ACC), Portland, Oregon, USA (2014)

**Aerospace Graduate Student Fellowship**, Texas A&M University (Spring 2013)

**Honors in Mechanical Engineering**, Graduate School, Korea University (Spring 2006)

**The BK (Brain Korea) 21 Scholarship**, Graduate School, Korea University (2006, 2007)

**Research Scholarships**, Korea University (Fall 2005)

**Honors Scholarships**, Korea University (Spring, Fall 2005)

**Mechanical Engineering Semester High Honors**, Korea University (Fall 2004, Spring 2005)

**Work-Study Scholarships**, Korea University (Fall 1998, Spring 1999)

**Academic  
Experiences**

**University of California, San Diego**, San Diego, California, USA

*Postdoctoral Scholar*

**Sep. 2016 - Jul. 2017**

Multi-Objective Optimization in Disaster Response Scenario  
Ergodic Trajectory using Optimal Transport

**Texas A&M University**, College Station, Texas, USA

*Postdoctoral Research Associate*

**Sep. 2015 - Aug. 2016**

Distributed Networked Control Systems  
Asynchronous Algorithms  
Distributed Optimization  
Consensus of Multi-Agent Systems

*Research Assistant, Aerospace Engineering*

**Mar. 2012 - Aug. 2015**

Advisor: Dr. Raktim Bhattacharya  
Uncertainty Propagation/Quantification  
Networked Control Systems  
Performance and Robustness Analysis of Stochastic Jump Linear Systems and  
Markov Jump Linear Systems  
Analysis of Massively Parallel Asynchronous Computing Algorithm

*Teaching Assistant, Aerospace/Mechanical Engineering*

AERO 422-500: Active Controls for Aerospace Vehicles (Dr. Raktim Bhattacharya, Fall 2014 / Spring 2015)

AERO 310-500: Aerospace Dynamics (Dr. Suman Chakravorty, Spring 2013)

MEEN 357-501: Engineering Analysis for Mechanical Engineers (Dr. Richard Malak, Fall 2010 and Dr. Andrew Duggleby, Spring 2011)

Teaching students during office hours / Grading quizzes, homeworks, and exams / Helping students for MATLAB programming

**University of Notre Dame**, Notre Dame, Indiana, USA

*Visiting Scholar, Electrical Engineering*

**Summer, 2014**

Advisor: Dr. Vijay Gupta

Probabilistic Uncertainty Analysis of Asynchronous Parallel Numerical Algorithms

**Korea University**, Seoul, Republic of Korea

*Research Assistant, Mechanical Engineering*

**Feb. 2006 - Feb. 2008**

Advisor: Dr. Woojin Chung

Experimental research of automatic parking control for a Car-Like Mobile Robot

Developing Car-Like Mobile Robot using Micro-controller



AVR { ATmega128 & ATMEL8051 (Microcontrollers)  
NI-DAQ (Data-measurement equipment)

## Professional and Other Activities

### Technical Program Committee

*Track Chair* for Distributed systems and Robotics, IEEE Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON) 2019  
*Committee member* for Distributed systems and Robotics, IEEE Annual Information Technology Electronics & Mobile Communication Conference (IEMCON) 2019

### Reviewer / Participated in reviewing

Automatica (2015, 2016)  
IEEE Transaction on Automatic Control (2016, 2019)  
IEEE Transaction on Systems, Man and Cybernetics: Systems (2015)  
IEEE Transaction on Human-Machine Systems (2015)  
IEEE Transaction on Robotics (2017)  
IEEE Conference on Decision and Control (2016, 2017)  
IEEE CSS American Control Conference (2012 - 2018)  
IEEE Conference on Control Technology and Applications (2017)  
ASME Dynamic Systems and Control Conference (2014, 2019)  
IEEE International Conference on Robotics and Automation (2008)  
IEEE International Conference on Advanced Robotics (2007)  
IEEE International Conference on Control, Automation and Systems (2006, 2007)

### Memberships

IEEE Student Member (2013-2015)  
IEEE Young Professionals (2013-2019)  
IEEE Control Systems Society Member (2013-2019)  
IEEE Communications Society Member (2013-2015)

### Texas A&M University, College Station, Texas, USA

Registration Assistant, Volunteer, Texas Systems Day (Mar. 28, 2014)  
Volunteer, Texas A&M Physics & Engineering Festival (2012)  
Lab tour Volunteer, Aerospace Engineering Undergraduate Student (2012)  
Vice President, Texas A&M - Korea University Student Association (2011-2012)

## Publications

### Journal Articles

1. K. Lee and R. Bhattacharya, Effect of Asynchronous Communications on Stationary Solutions for Discrete-Time Multi-Agent Systems, 2019 (submitted).
2. B. Molley and K. Lee, Accurate Positioning of Quadrotor UAVs using a Wii Remote Camera and Signal Modulations for Outdoor Precision Landing, *New Mexico Journal of Science*, Vol. 52, No. 1, 2018.
3. K. Lee and R. Bhattacharya, Optimal Controller Switching for Resource-Constrained Dynamical Systems, *International Journal of Control, Automation and Systems*, 16, no. 3, pages 1323-1331, 2018.
4. K. Lee and R. Bhattacharya, Stability Analysis of Large-Scale Distributed Networked Control Systems with Random Communication Delays: A Switched System Approach, *Systems & Control Letters*, 85, pages 77-83, 2015.
5. K. Lee, A. Halder, and R. Bhattacharya, Performance and Robustness Analysis of Stochastic Jump Linear Systems using Wasserstein metric, *Automatica*, Vol. 51, pages 341-347, 2015.

6. A. Halder, K. Lee, and R. Bhattacharya, Optimal Transport Approach for Probabilistic

11. K. Lee and R. Bhattacharya, Optimal Switching Synthesis for Jump Linear Systems with Gaussian initial state uncertainty, *Dynamic Systems and Control Conference (DSCC)*, San Antonio, Texas, USA, 2014.
12. K. Lee, A. Halder, and R. Bhattacharya, Probabilistic Robustness Analysis of Stochastic Jump Linear System, *American Control Conference (ACC)*, pages 2638-2643, Portland, Oregon, USA, 2014.
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