GIRISH JOSHI

CONTACT
INFORMATION

Distributed Autonomous Systems Lab (DASLAB),
167, Coordinated Science Laboratory,
University of Illinois Urbana-Champaign
Urbana, IL-61801

+1(708) 400-1678
girishj2@illinois.edu
joshivgirish@gmail.com
linkedIn.com,GitHub.com

RESEARCH
INTERESTS

- Statistical Reinforcement Learning, Sample Efficient Policy Transfer in RL, Cross Domain skill transfer in RL
- Information enabled Adaptive Control for Cyber-Physical Systems.
- Bayesian Nonparametric Approach in Adaptive Control and Decision making in Non-Stationary Environment.
- Guidance, Control and Estimation Theory.

EDUCATION

University of Illinois Urbana-Champaign, Urbana IL

PhD, [Aerospace Engineering] (GPA 3.53/4.0)   **May 2016 - present**

- Advisor: Dr. Girish Chowdhary

Oklahoma State University, Stillwater OK (Transferred to UIUC)

PhD, [Aerospace Engineering] (GPA 4.0/4.0)   **August 2015 - May 2016**

- Advisor: Dr. Girish Chowdhary

Indian Institute of Science, Bangalore, India

Master's Degree [Aerospace Engineering] (GPA 6.1/8)   **August 2011-August 2013**

- Dissertation topic: *Robust and Precision Satellite Formation Flying Guidance Using Adaptive Optimal Control Techniques*
- Advisor: Dr. Radhakant Padhi

B.V.B College of Engineering and Technology, Hubli, Karnataka, India

Bachelor's Degree [Mechanical Engineering]   **August 2002-July 2006**

- Dissertation topic: *Design and testing of Solid propellant rocket motor using "KNO_3 : Dextrose" propellant*

WORK
EXPERIENCE

Scientist/Engineer SD   **November 2006-August 2015**
Project Manager, Lunar Rover Deployment Mechanism
Chandrayaan-2 (India's 2nd Moon mission)
Project Manager, SCATSAT-1
Spacecraft Mechanism Group
ISRO satellite Center, Indian Space Research Organization, Bangalore-560001, India

PUBLICATIONS   **Conference papers**

1. Girish Joshi, Radhakant Padhi, **Formation Flying of Small Satellites using Suboptimal MPSP Guidance**, *American control conference,IEEE*, Washington DC, 2013

2. Girish Joshi, Arnab Maity, Radhakant Padhi, **Formation Flying of Small Satellites using Suboptimal G-MPSP Guidance** *Guidance, Navigation, and Control Conference, AIAA* , Boston, 2013

3. Girish Joshi, Radhakant Padhi, **Robust Satellite Formation Flying Using Dynamic Inversion with Modified State Observer**, *Multi System Conference, Computer-Aided Control System Design and Systems with Uncertainty(CACSD-SU) IEEE*, Hyderabad 2013

4. Girish Joshi, Radhakant Padhi, **Robust Satellite Formation Flying Through Online Trajectory Optimization using LQR and Neural Networks**, *Advances in Control and Optimization of Dynamical Systems*, 2014

5. Girish Joshi, Radhakant Padhi, **Formation Flying of Small Satellites using Suboptimal MPSP Guidance**, *Indian National Society for Aerospace and Related Mechanism*, Bangalore Chapter, 2014

6. R Padhi, Girish Joshi, Kapil Sachan, Avijeet Banerjee, **Guidance of Autonomous Aerospace Vehicles for Vertical Soft Landing using Nonlinear Control Theory**, *Indian Institute of Science Bangalore (INDIA),IISC/CSIC/AE/RP/AOARD/2015/01*

7. Girish Joshi, Radhakant Padhi,**Robust Control of Quadrotors using Indirect Neuro-Adaptive Control Augmented with State Estimation**, *Guidance, Navigation, and Control Conference, AIAA , Texas, 2017*

8. Girish Joshi, Girish Chowdhary, **Cross-Domain Transfer Learning using Target Apprentice**, *:The Multi-disciplinary Conference on Reinforcement Learning and Decision Making 2017*

9. Girish Joshi, Girish Chowdhary, **Cross-Domain Transfer in Reinforcement Learning using Target Apprentice**, *IEEE International Conference on Robotics and Automation Brisbane 2018*

10. Girish Joshi, Girish Chowdhary, **Adaptive Control using Gaussian-Process with Model Reference Generative Network**, *IEEE Conference on Decision and Control 2018*

11. Girish Joshi, Girish Chowdhary, **Hybrid Direct-Indirect Adaptive Control of Nonlinear System with Unmatched Uncertainty**, *IEEE International Conference on Control, Decision and Information Technologies 2019*

12. Girish Joshi, Girish Chowdhary, **Deep Model Reference Adaptive Control**, *IEEE International Conference on Decision and Control 2019*

13. Girish Joshi, Jasvir Virdi, Girish Chowdhary, **Experimental Evaluation of Deep Model Reference Adaptive Control**, *AIAA SciTech-2020*

TALKS/POSTER PRESENTATION

1. The Midwest ML Symposium (MMLS), **Sample efficient Policy Transfer in Reinforcement Learning** (Best Poster Finalist)

SKILLS   Python(TensorFlow), MATLAB, C++

REFERENCE   Available on request.