

# Venkata Ramana Makkapati

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<https://vrmakkapati.github.io/>

EDUCATION	<i>Doctor of Philosophy, Aerospace Engineering</i> Georgia Institute of Technology Focus: Optimal control under uncertainties, Covariance steering, Cognitive hierarchy theory, Pursuit-evasion games Advisor: Prof. Panagiotis Tsiotras	Aug' 2016 - <i>Present</i>
	<i>Master of Science, Computational Science and Engineering</i> Georgia Institute of Technology Focus: Machine Learning	Aug' 2017 - <i>Present</i>
	<i>Master of Technology, Aerospace Engineering</i> Indian Institute of Technology Kanpur Focus: Flight Dynamics and Control Advisor: Dr. Mangal Kothari	July 2014 - May 2016
	<i>Bachelor of Technology, Aerospace Engineering</i> Indian Institute of Technology Madras Minor: Industrial Engineering	July 2010 - May 2014
EXPERIENCE	<i>Summer Intern</i> Vehicle Integration Department, Mahindra & Mahindra, Chennai Topic: Approximation methods for the modal analysis of an exhaust system Mentor: David Neihguk	May 2013 - July 2013
	<i>Summer Intern</i> Flight Mechanics and Control Division, CSIR-NAL, Bangalore Topic: Evaluation of free-to-roll test technique to study unsteady motions of an aircraft. Mentor: Dr. Mallesh Bommanahal	May 2012 - July 2012
ARTICLES	<i>Optimal Evading Strategies and Task Allocation in Multi-Player Pursuit-Evasion Problems</i> <i>V. R. Makkapati</i> and P. Tsiotras Dynamic Games and Applications (under review)	
	<i>Nested Saturation based Guidance Law for Unmanned Aerial Vehicles</i> J. Patrikar, <i>V. R. Makkapati</i> , A. Pattanaik, H. Parwana, and M. Kothari ASME Journal of Dynamic Systems, Measurement, and Control (under review)	
	<i>Optimal Evading Strategies for Two-Pursuer/One-Evader Problems</i> <i>V. R. Makkapati</i> , W. Sun, and P. Tsiotras Journal of Guidance, Control, and Dynamics (JGCD), 2018	
	<i>A Comprehensive Differential Game Theoretic Solution to a Game of Two Cars</i> R. Bera, <i>V. R. Makkapati</i> , and M. Kothari Journal of Optimization Theory and Applications (JOTA), 2017	

*Pursuit-Evasion Games of High Speed Evader*  
*M. V. Ramana* and M. Kothari  
 Journal of Intelligent & Robotic Systems (JINT), 2017

*Pursuit Strategy to Capture High-Speed Evaders Using Multiple Pursuers*  
*M. V. Ramana* and M. Kothari  
 Journal of Guidance, Control, and Dynamics (JGCD), 2016

**PROCEEDINGS  
& TALKS**

*Trajectory Desensitization in Optimal Control Problems*  
*V. R. Makkapati*, M. Dor, and P. Tsiotras  
 IEEE Conference on Decision and Control (CDC), 2018

*Optimal Strategies and Task Allocation in Multi-Pursuer Single-Evader Problems*  
*V. R. Makkapati* and P. Tsiotras  
 International Symposium on Dynamic Games and Applications, 2018 ([Invited Talk](#))

*Pursuit-Evasion Problems Involving Two Pursuers and One Evader*  
*V. R. Makkapati*, W. Sun, and P. Tsiotras  
 AIAA Guidance, Navigation, and Control Conference (GNC), SciTech, 2018

*Motion planning for a fixed-wing UAV in urban environments*  
*M. V. Ramana*, S. A. Varma, and M. Kothari  
 IFAC Conference on Advances in Control and Optimization of Dynamical Systems (ACODS), 2016

*A Cooperative Pursuit-Evasion Game of a High Speed Evader*  
*M. V. Ramana* and M. Kothari  
 AIAA Guidance, Navigation, and Control Conference (GNC), SciTech, 2016

*A Cooperative Pursuit-Evasion Game of a High Speed Evader*  
*M. V. Ramana* and M. Kothari  
 IEEE Conference on Decision and Control (CDC), 2015

**TEACHING**

*Graduate Teaching Assistant* Aug' 2018 - *Present*  
 Multi-variable Linear Systems and Control

*Teaching Assistant* Aug' 2013 - May 2014  
 Flight Dynamics, Flight Stability & Control

**EXTRA-  
CURRICULAR  
ACTIVITIES**

*Long Distance Running*  
*Bronze medal* in the Deans Trophy Road Race 2014 at IIT Madras  
*Team record* for running the longest distance of 87 km on a treadmill in 6 hours at  
 Treadathon 2014, Chennai.

*National Cadet Corps (NCC)*  
*Leading Flight Cadet* with *B Certificate* in the NCC examination

**VOLUNTEER  
EXPERIENCE**

*Shaastra*, Annual Technical Festival, IIT Madras Aug' 2011 - Apr' 2014  
 Positions: Finance Coordinator, Finance Deputy Coordinator, Event Coordinator

*Hostel Executive Council*, Jamuna Hostel, IIT Madras Feb' 2012 - Feb' 2013