

**THE UNIVERSITY OF TEXAS AT AUSTIN**  
**Cockrell School of Engineering**  
**Resume**

**FULL NAME:** Maruthi R. Akella                      **TITLE:** Cockrell Family Chair in Engineering #19

**DEPARTMENT:** Aerospace Engineering and Engineering Mechanics

**EDUCATION:**

National Institute of Technology Calicut	Mechanical Engineering	B.Tech. (Hons)	1992
Indian Institute of Science.	Aerospace Engineering	M.E.	1994
Texas A&M University.	Aerospace Engineering	Ph.D.	1998

**PROFESSIONAL REGISTRATION:** State of Texas

**CURRENT AND PREVIOUS ACADEMIC POSITIONS:**

Graduate Teaching Assistant, Aerospace Engineering, Indian Institute of Science, Bangalore, India for a graduate class on Atmospheric Flight Dynamics, 8/92 – 1/94.

Research Associate, Space Technology Cell, Indian Space Research Organization, Bangalore, India, 2/94 – 8/94.  
 Member of the flight trajectory design team for the Geostationary Satellite Launch Vehicle Program, incorporated land mass constraints into the real-time software.

Graduate Research Assistant, Aerospace Engineering, Texas A&M University, 1/95 – 12/98. Worked under the supervision of Prof. John L. Junkins on several research projects in the areas of Space Debris Evolution, and design of Robust Adaptive Controllers for Aircraft and Spacecraft Maneuvers.

Post Doctoral Fellow, Center for Systems Science, Yale University, 1/99 – 8/99. Worked with Prof. Kumpati S. Narendra on the design of Robust Adaptive Systems for the control of Highly Maneuverable Aerospace Vehicles.

Assistant Professor, Department of Aerospace Engineering and Engineering Mechanics, The University of Texas at Austin, 9/99 – 9/05. Currently involved in teaching and research activities encompassing the areas of Robust Adaptive Control, Estimation Theory, and Nonlinear Dynamical Systems.

Associate Professor, Department of Aerospace Engineering and Engineering Mechanics, The University of Texas at Austin, 9/05 – 9/15.

Professor, Department of Aerospace Engineering and Engineering Mechanics, The University of Texas at Austin, 9/15 – present.

Founding Director, Center for Autonomous Air Mobility (CAAM), The University of Texas at Austin, 1/19-

**OTHER PROFESSIONAL EXPERIENCE:**

Research Associate, Space Technology Cell, Indian Space Research Organization, Bangalore, India, 2/94 – 8/94.  
 Member of the flight trajectory design team for the Geostationary Satellite Launch Vehicle Program, incorporated land mass constraints into the real-time software.

**CONSULTING:**

Knowledge Based Systems, Inc., College Station, TX, 2002-2010.

Advanced Micro Devices Inc., Austin, TX, 2003-2007.

Ball Aerospace Inc., Dayton, OH, May-Dec. 2004.

The University of Texas at Austin, Center for Electromechanics, 2006-2018.

Intuitive Machines, LLC, 2013-2017.

Omega Optics LLC, 2023-2024.

Katalyst Space Technologies LLC, 2023-2024.

**MEMBERSHIPS IN PROFESSIONAL AND HONORARY SOCIETIES:**

American Institute of Aeronautics and Astronautics (AIAA): 1995-present; Fellow, 2022-  
 American Astronautical Society (AAS): 1996-present; Fellow, 2013-  
 Institute of Electrical & Electronic Engineers (IEEE): 1999-present; Fellow, 2021-  
 American Society for Engineering Education (ASEE): 1999-present  
 Sigma-Gamma-Tau (SGT), 2000-present  
 International Academy of Astronautics: Corresponding Member (Elected): 2020-present

**PROFESSIONAL SOCIETY AND MAJOR GOVERNMENTAL COMMITTEES, EDITORIAL BOARDS, AND CONFERENCES ORGANIZED/CHAired:****Outside Committees**

Steering Committee Member, India-US Defense Acceleration Ecosystem (INDUS-X), 07/23-present  
 Member, U.S. Technical Advisory Group for Space Systems and Operations, 1/22-present  
 Board of Directors, American Astronautical Society, 1/19-present  
 White Cell Evaluator, DiDEX-3 C5ISR U.S. Army Counter-UAS Operations, December 2021  
 Member and Lead for Technology Area, Advanced Air Mobility Advisory Committee (Statutory Body), State of Texas Department of Transportation, 11/21-12/24  
 Chair, IEEE Judith Resnik Award Committee, 01/21-06/24  
 Member, American Astronautical Society Fellow Selection Guidelines Review Committee, 10/21-12/22  
 Member, EuroGNC Technical Committee, Council of European Aerospace Societies (CEAS), 03/19-present  
 Member, IEEE Judith A. Resnik Award Committee, Aerospace and Electronic Systems Society, 2018-2024  
 Chair, Space Flight Mechanics Technical Committee, American Astronautical Society, 2018-2019  
 Society Review Chair (AIAA), American Control Conference, 2015-2019  
 Chair-Elect, Space Flight Mechanics Technical Committee, American Astronautical Society, 2017-18  
 Chair, Dirk Brouwer Award Selection Committee, American Astronautical Society, 2015-17  
 Member, AAS Spaceflight Mechanics Technical Committee, 2003-2009, 2014-2019, 2023-present  
 Member, AIAA Guidance and Control Technical Committee, 2014-present  
 Member, Steering Committee, Advanced Sciences and Technology Research Institute (ASTRIA), Air Force Research Laboratory, Space Vehicles Directorate, Kirtland, NM, 2009-15  
 Invited Member, National Science Foundation Workshop on Detection and Defeat of Improvised Explosive Devices, Representing the NSF Engineering Directorate, June 2006

**Journal Editorships & Editorial Boards**

Editor-in-Chief, *AAS The Journal of the Astronautical Sciences*, 2019-present  
 Associate Editor, *AIAA Journal of Guidance, Control, and Dynamics*, 2008-present  
 Senior Editor (Space Systems), *IEEE Transactions on Aerospace and Electronic Systems*, 2016-2021, 2026-present  
 Associate Editor, *AAS The Journal of the Astronautical Sciences*, 2013-2019  
 Associate Editor, *IEEE Transactions on Aerospace and Electronic Systems*, 2008-2015

**Conference Activities**

Session Chairman, J.L. Junkins Astrodynamics Symposium, College Station, TX, May 2003  
 Conference Technical Chairman, AAS/AIAA Space Flight Mechanics Meeting, Sedona, AZ, January 2007  
 Program Committee, 1st International Conference on Advances in Control and Optimization of Dynamical Systems, Bangalore, India, February 2007  
 Session Chairman, Society of Engineering Sciences (SES) Meeting, College Station, TX, October 2007  
 Session Chairman, AIAA Guidance, Navigation, and Control Conference, Honolulu, HI, August 2008  
 Technical Chairman, International Conference on Computational and Experimental Engineering & Sciences, Nanjing, China, April 2011  
 Publication Committee, 2<sup>nd</sup> International Conference on Advances in Control and Optimization of Dynamical Systems, Bangalore, India, February 2012  
 Session Chairman, Jer-Nan Juang Astrodynamics Symposium, College Station, TX, June 2012  
 Session Chairman, AAS/AIAA Space Flight Mechanics Meeting, Kauai, HI, February 2013  
 Session Chairman, AAS/AIAA Astrodynamics Specialist Meeting, Hilton Head, SC, August 2013  
 Session Chairman, AAS/AIAA Space Flight Mechanics Meeting, Santa Fe, NM, January 2014

Session Chairman, American Control Conference, Portland, OR, June 2014  
 Session Chairman, AAS/AIAA Astrodynamics Specialist Meeting, SPACE-2014, San Diego, CA, August 2014  
 Session Chairman, AAS/AIAA Space Flight Mechanics Meeting, Williamsburg, VA, January 2015  
 Session Chairman, 12<sup>th</sup> Yale Workshop on Adaptive and Learning Systems, New Haven, CT, June 2015  
 Session Chairman, American Control Conference, Chicago, IL, June 2015  
 Session Chairman, International Conference on Computational and Experimental Engineering and Sciences, Reno, NV, July 2015  
 Session Chairman, AAS/AIAA Astrodynamics Specialist Meeting, Vail, CO, August 2015  
 Technical Program Committee, IFAC Indian Control Conference, Hyderabad, India, January 2016  
 Session Chair, AAS/AIAA Space Flight Mechanics Meeting, San Antonio, TX, February 2017  
 Session Chair, American Control Conference, Seattle, WA, May 2017  
 Session Chair, AIAA SciTech Forum, Orlando, FL, January 2018  
 Session Chair, 57<sup>th</sup> IEEE Conference on Decision and Control (CDC), Miami, FL, December 2018  
 Associate Editor-at-Large, American Control Conference, Philadelphia, PA, June 2019  
 Session Chair, AIAA SciTech Forum, Orlando, FL, January 2020  
 Member, EuroGNC Council of European Aerospace Societies, 2019-present  
 AIAA Society Chair, American Control Conference, 2020-present  
 Chair, Technical Activities, IFAC Automatic Control and Dynamic Optimization Society (ACODS), 2/20-present  
 Chair, AIAA GNC Graduate Awards Committee, 2021-2024  
 Technology Area Coordinator, Urban Air Mobility Advisory Committee, State of Texas, 09/21-present  
 Co-Organizer, Space Domain Awareness Symposium, Society of Engineering Sciences (SES), College Station, TX, November 2022  
 General Chair, 35<sup>th</sup> AAS/AIAA Space Flight Mechanics Meeting, Kaua'i, HI, January 19-23, 2025  
 Workshop Lead Organizer (Cislunar Astrodynamics), IEEE SPACE Conference, July 2025

#### **OTHER PROFESSIONAL HIGHLIGHTS:**

Reviewer, *Engineering Analysis with Boundary Elements*  
 Reviewer, *International Journal of Engineering Science*  
 Reviewer, *Journal of Guidance, Control and Dynamics* textbook, Nonholonomic Motion of Rigid Mechanical Systems for a DAE Viewpoint, October 2000  
 Reviewer, Addison-Wesley, Signals and Systems: Analysis of Signals Through Linear Systems, October 2000.  
 Reviewer, Addison-Wesley book, Linear Dynamical Systems and Signals, Gajic (author), April 2001  
 Reviewer, Best Student Paper Category, 2004 ASME International Mechanical Engineering Congress and Exposition, Anaheim, CA, 2004  
 Member, Israel Science Foundation, Proposal Review Board, March 2004, Feb.-April 2006, Feb. – April 2007  
 Member, National Science Foundation Proposal Review Panel, July 2006, July 2007, April 2010  
 Reviewer, NASA NSTRF Fellowship Committee, 2017-present  
 Reviewer, AFOSR Astrodynamics Program, 2023-present  
 Current Review Activities, *Journal of Guidance, Control and Dynamics*, *Journal of Astronautical Sciences*, *IEEE Transactions on Education*, *IEEE Transactions on Automatic Control*, *Automatica*, *Systems and Control Letters*, *ASME Journal of Dynamic Systems and Measurement*

#### **PROFESSIONAL COMMUNITY SERVICE:**

Head Coach, First Lego League Robotics, Central Texas Region, 2015-16  
 Senior Judge, Exxon-Mobil Science Fair, April 2001  
 UT Honors Colloquium, High-School Outreach Program, Summer 2001  
 Faculty Mentor to LBJ High School's Science Academy, Austin, TX

#### **UNIVERSITY COMMITTEES/ADMINISTRATIVE ASSIGNMENTS:**

##### **University of Texas at Austin**

Member, Academic Integrity Committee, 2012-13  
 Member, University Endowed Presidential Scholarships Committee, 2014-20  
 Affiliated Faculty, Texas Robotics, 2014-present

**Cockrell School of Engineering**

Member, Equal Opportunity in Engineering, 2000-01  
 Member, Global Engineering Education Committee, 2003-04  
 Member, Degrees and Courses Committee, 2004-05  
 Member, Co-op Committee, 2006-07  
 Member, Accreditation & Assessment Committee, 2008-present  
 Member, ASE/EM Department Chair Review Committee, 2015-16  
 Member, ASE/EM Department Chair Search Committee, 2019-20  
 Member, Promotion and Tenure Committee, 2021-2023

**Department**

Member, Web page Committee, 1999-2000  
 Judge, Rube-Goldberg Contest, Fall 2000  
 Member, Freshman Mentoring Committee, Fall 2000  
 Mentor, Freshman Fall Gathering, August 2001  
 Member, ABET EC2000 Committee, August 2002-04  
 Member, Program Evaluation & Improvement Committee, 2001-02  
 Member, Program Evaluation & Improvement Committee, Spring 2004  
 Chairman, Staff Awards Nomination Committee, 2004-05  
 Member, ASE/EM Lab Courses Committee, 2003-05  
 Chairman, ASE/EM Lab Courses Committee, 2005-06  
 Member, UG Program Evaluation & Improvement Committee, Fall 2005  
 Member, Staff Awards Nomination Committee, 2003-04, 2005-06  
 Member, ASE/EM Lab Courses Committee, 2006-07  
 Chairman, Undergraduate Advising, 2006-07  
 Member, Guidance & Control Qualifying Exam Committee, 1999-present  
 Member, Undergraduate Scholarships Committee, 2007-2014  
 Member, Departmental Safety Committee, 2010-2012  
 Member, ASE/EM Faculty Search Committee, 2010-2014  
 Member, ASE/EM Undergraduate Curriculum Committee, 2012-2014  
 Member, ASE/EM Computational Engineering Undergraduate Program Exploration Committee, 2013-2015  
 Chair, ASE/EM Faculty Search Committee (Human-Robot Controls Area), 2013-2014  
 Chair ASE/EM Faculty Search Sub-Committee (Robotic Systems), 2014-15  
 Member, ASE/EM Strategic Planning Committee, 2014-23  
 Chair, ASE/EM Undergraduate Curriculum Committee, 2014-15  
 Member, ASE/EM Budget Council Promotion and Tenure Sub-Committee, 2014-15  
 Member, ASE/EM Undergraduate Curriculum Committee, 2014-15  
 Chair ASE/EM Faculty Search (Autonomy, Controls, Robotic Systems), 2015-16  
 Member, ASE/EM Faculty Search Committee (Space Systems & Remote Sensing), 2016-17  
 Member, Aerospace Engineering Program Undergraduate Curriculum Committee, 2016-2020  
 Member, Computational Engineering Program Undergraduate Curriculum Committee, 2016-2019  
 Chair, ASE/EM Faculty Search Committee (Space Systems & Remote Sensing), 2017-2020  
 Chair, ASE/EM Budget Council Promotion and Tenure Sub-Committee, 2017-18  
 Chair, Robotics Consortium Faculty Search Committee (ASE/EM), 2018-2019  
 Chair, ASE/EM Budget Council Promotion and Tenure Sub-Committee, 2019-20  
 Member, Diversity, Equity, and Inclusion Committee, 2020-present  
 Member, Faculty Annual Evaluation Committee, 2020-present  
 Chair, Faculty Search Committee (Machine Learning Cluster), 2021-22  
 Chair, ASE/EM Budget Council Promotion and Tenure Sub-Committee, 2023-24  
 Chair, ASE/EM Faculty Annual Review Committee 2025-present  
 Member, ASE/EM Faculty Search Committee (Emerging Topics), 2025-present  
 Chair, ASE/EM Industry Initiative Committee, 2025-present

**Administrative Positions:**

Faculty Advisor, Sigma Gamma Tau, 2000-2006  
 Graduate Area Coordinator (GNC), 2000-2002  
 ASE Co-op Engineering Advisor, 2007-2015  
 ASE ABET Co-Coordinator, 2008-2012  
 Faculty Lead Coordinator (Control, Autonomy, Robotics), 2013-present  
 Faculty Advisor, Texas Aerial Robotics, 2016-present  
 Director, Center for Autonomous Air Mobility, 2019-present

**HONORS AND AWARDS:**

- National Merit Scholarship, Government of India, 1988-1992
- **University of Calicut Gold Medal for obtaining First Rank in Mechanical Engineering**, 1992
- **Texas A&M University Aerospace Academic Excellence Award**, 1998
- American Astronautical Sciences John Breakwell Award, 1999
- **Haliburton Young Faculty Award, UT Austin Cockrell School of Engineering**, 2001
- Nominated for Best Conference Paper at AIAA/AAS Spaceflight Mechanics Meeting, 2001
- Summer Faculty Fellow, AFRL/VA, Dayton, OH, May-June 2004
- ONR-ASEE Faculty Fellowship, SPAWAR San Diego Center, US Navy, July 2004
- AFOSR-ASEE Summer Fellowship, 2007
- **Fellow, American Astronautical Society (AAS)**, 2013
- **Mechanics and Control of Flight Award, American Institute of Aeronautics and Astronautics**, 2014
- Myron L. Begeman Endowed Faculty Fellowship, UT Austin Cockrell School of Engineering, 2014-17
- Visiting Professorship, Beihang University, Beijing, China, 2014-2019
- Outstanding Aerospace Engineer Award, Texas A&M Alumni Association, May 2015
- **IEEE Judith A. Resnik Space Award**, Aerospace and Electronic Systems Society, August 2015
- **IEEE Distinguished Lecturer**, Aerospace and Electronic Systems Society, 2017-2020
- E. P. Schoch Endowed Professorship, UT Austin Cockrell School of Engineering, 2017-2020
- Keynote Lecture (Robotics Autonomy and Trust), General Dynamics – Dynamic Connections-2018 Conference, Palm Springs, CA, June 2018
- Highlight Lecture, International Academy of Astronautics SciTech Forum, Moscow, Russia, November 2018
- Plenary Lecture, EuroGNC Conference, Milano, Italy, April 2019
- Keynote Lecture, IFAC-ACODS Conference, IIT Madras, India, February 2020
- Ashley H. Priddy Endowed Professorship, UT Austin Cockrell School of Engineering, 2020-2022
- **IEEE Technical Excellence in Aerospace Control Award**, Control Systems Society, 2020
- **Dirk Brouwer Award, American Astronautical Society**, 2020
- **Academician, International Academy of Astronautics**, April 2021
- Plenary Lecture, AAS/AIAA Astrodynamics Specialist Conference (Big Sky – Virtual), August 2021
- **IEEE Fellow**, elected (November 2021)
- **AIAA Fellow** (class of 2022)
- **Cockrell Family Chair in Engineering #19**, UT Austin Cockrell School of Engineering, August 2022
- Plenary Lecture, IFAC Aerospace Controls Conference, IIT Bombay, November 2022
- AIAA GNC Plenary Lecture, AIAA SciTech Forum, National Harbor, MD, January 2023
- Invited Lecture (semi-plenary), American Control Conference, San Diego, CA, May 2023
- Plenary Lecture, European Space Agency Guidance, Navigation, and Control Section, June 2023
- Keynote Lecture, J.P. Morgan Chase Foster Innovation Week, June 2023
- **Distinguished Alumni Award, National Institute of Technology Calicut, India**, 2023
- Keynote Lecture, IEEE Space Conference, July 2024
- **International Astronautical Union, Asteroid #5376 designated as “Maruthiakella”** honoring contributions to “many successful applications in astrodynamics,” October 2024
- Keynote Lecture, 75<sup>th</sup> National Congress of the Astronautical Society of India, Pune, India, January 31, 2025
- **VAIBHAV Fellow (class of 2025), Government of India, Ministry of Science and Technology**, March 2025
- **AIAA von Kármán Lecture in Astronautics Award**, 2026

**PUBLICATIONS:****Refereed Journal Publications**

- J1. Junkins, J.L., Akella, M.R., and Alfriend, K.T., "Non-Gaussian Error Propagation in Orbital Mechanics," *The Journal of the Astronautical Sciences*, Vol. 44, pp. 541-563, 1996.
- J2. Junkins, J.L., Akella, M.R., and Robinett, R.D., "Nonlinear Adaptive Control of Spacecraft Maneuvers," *Journal of Guidance, Control and Dynamics*, Vol. 20, No. 6, pp. 1104-1110, 1997.
- J3. Akella, M.R., Junkins, J.L., and Alfriend, K.T., "Some Consequences of Force Model Uncertainty on Probability of Collision with Orbital Debris," *Journal of the Chinese Society of Mechanical Engineers*, Vol. 19, No. 1, pp. 1-7, 1997.
- J4. [Alfriend, K.T., Akella, M.R., Frisbee, J., Foster, L., Lee, D., and Wilkins, M., "Probability of Collision Error Analysis," \*Journal of Space Debris\*, Vol. 1, No. 1, pp. 21-35, 1999.](#)
- J5. Kotamraju, G.R., and Akella, M.R., "Stabilized Continuation Methods for Boundary Value Problems," *Applied Mathematics and Computation*, Vol. 112, No. 2-3, pp. 317-332, 2000.
- J6. [Akella, M.R., "On Low Radial Thrust Spacecraft Motion," \*R.H. Battin Special Issue of The Journal of the Astronautical Sciences\*, Vol. 48, No. 2-3, pp. 149-161, April-September 2000.](#)
- J7. Ko, G., Kurdila, A.J., Strganac, T., Junkins, J.L., and Akella, M.R., "Nonlinear Control Methods for High-Energy Limit-Cycle Oscillations," *Journal of Guidance, Control, and Dynamics*, Vol. 24, No. 1, pp. 185-192, January-February 2001.
- J8. [Akella, M.R., and Alfriend, K.T., "Probability of Collision Between Space Objects," \*Journal of Guidance, Control and Dynamics\*, Vol. 23, No. 5, pp. 769-772, September-October 2000.](#)
- J9. Akella, M.R., and Kotamraju, G.R., "Treffitz Indirect Method Applied to Nonlinear Potential Problems," *Engineering Analysis with Boundary Elements*, Vol. 24, pp. 459-465, 2000.
- J10. [Akella, M.R., "Rigid Body Attitude Tracking Without Angular Velocity Feedback," \*Systems and Control Letters\*, Vol. 42, No. 4, pp. 321-326, 2001.](#)
- J11. Schaub, H., Akella, M.R., and Junkins, J.L., "Adaptive Realization of Linear Closed-Loop Tracking Dynamics in the Presence of Large System Model Errors," *The Journal of the Astronautical Sciences*, Vol. 48, No. 4, pp. 537-551, October-December 2000.
- J12. Schaub, H., Akella, M.R., and Junkins, J.L., "Adaptive Control of Nonlinear Attitude Motions Realizing Linear Closed Loop Dynamics," *Journal of Guidance, Control and Dynamics*, Vol. 24, No. 1, pp. 95-100, January-February 2001.
- J13. Junkins, J.L., Akella, M.R., and Kurdila, A., "Adaptive Realization of Desired Constraint Stabilization Dynamics in the Control of Multibody Systems," *Philosophical Transactions of the Royal Society: Series A*, London, Vol. 359, No. 1788, pp. 2231-2249, 2001.
- J14. [Akella, M.R., and Broucke, R.A., "Anatomy of the Constant Radial Thrust Problem," \*Journal of Guidance, Control, and Dynamics\*, Vol. 25, No. 3, pp. 563-570, May-June 2002.](#)
- J15. Ko, J., Strganac, T., Junkins, J.L., Akella, M.R., and Kurdila, A.J., "Structural Model Reference Adaptive Control for a Wing Section with Structural Nonlinearity," *Journal of Vibration and Control*, Vol. 8, No. 5, pp. 553-573, July 2002.
- J16. Akella, M.R., Halbert, J.T., and Kotamraju, G.R., "Rigid Body Attitude Control with Inclinometer and Low-Cost Gyro Measurements," *Systems and Control Letters*, Vol. 49, No. 2, pp. 151-159, June 2003.
- J17. [Akella, M.R., "Adaptive Control – A Departure from the Certainty-Equivalence Paradigm," \*The Journal of the Astronautical Sciences\*, Vol. 52, No. 1-2, pp. 75-91, January-June 2004.](#)
- J18. Subbarao, K., and Akella, M.R., "Differentiator-Free Nonlinear Proportional-Integral Controllers for Rigid-Body Attitude Stabilization," *Journal of Guidance, Control, and Dynamics*, Vol. 27, No. 6, pp. 1092-1096, Nov.-Dec. 2004.
- J19. [Akella, M.R., and Subbarao, K., "A Novel Parameter Projection Mechanism for Smooth and Stable Adaptive Control," \*Systems and Control Letters\*, Vol. 54, No. 1, pp. 43-51, January 2005.](#)
- J20. [Akella, M.R., "Vision-Based Adaptive Tracking Control of Uncertain Robot Manipulators," \*IEEE Transactions on Robotics\*, Vol. 21, No. 4, pp. 748-753, August 2005.](#)
- J21. [Akella, M.R., Valdivia, A., and Kotamraju, G.R. "Velocity-Free Attitude Controllers Subject to Actuator](#)

- [Magnitude and Rate Saturations,” \*Journal of Guidance, Control, and Dynamics\*, Vol. 28, No. 4, pp. 559-666, July-Aug 2005.](#)
- J22. [Wallsgrove, R.J., and Akella, M.R., “Globally Stabilizing Saturated Attitude Control in the Presence of Bounded Unknown Disturbances,” \*Journal of Guidance, Control and Dynamics\*, 28\(5\), 2005, pp. 957-963.](#)
- J23. Akella, M.R., Seo, D., and Zanetti, R., “Attracting Manifolds for Attitude Estimation in Flatland and Otherlands,” *The Journal of the Astronautical Sciences*, Vol. 54, No. 3-4, July-December 2006.
- J24. Seo, D., and Akella, M.R., “Separation Property for the Rigid-Body Attitude Tracking Control Problem,” *Journal of Guidance, Control and Dynamics*, Vol. 30, No. 6, November-December 2007, pp. 1569-1576.
- J25. [Seo, D., and Akella, M.R., “High-Performance Spacecraft Adaptive Attitude-Tracking Control Through Attracting-Manifold Design,” \*Journal of Guidance, Control and Dynamics\*, Vol. 31, No. 4, July-August 2008, pp. 884-891.](#)
- J26. [Summers, T.H., Akella, M.R., and Mears, M.J., “Coordinated Standoff Tracking of Moving Targets: Control Laws and Information Architectures,” \*Journal of Guidance, Control, and Dynamics\*, Vol. 32, No. 1, January-February 2009, pp. 56-69.](#)
- J27. Seo, D., and Akella, M.R., “Non-certainty equivalent adaptive control for robot manipulator systems,” *Systems and Control Letters*, Vol. 58, No. 4, April 2009, pp. 304-308.
- J28. [Srikant, S., and Akella, M.R., “Persistence filter-based control for systems with time-varying control gains,” \*Systems and Control Letters\*, Vol. 58, No. 6, June 2009, pp. 413-420.](#)
- J29. [Mercker, T., Akella, M.R. and Alvarez, J., “Robot Navigation in a Decentralized Landmark-Free Sensor Network,” \*Journal of Intelligent and Robotic Systems\*, Vol. 60, Nos. 3-4, 2010, 553-576.](#)
- J30. [Srikant, S., Wagner, J.L., Valdivia, A., Akella, M.R., and Clemens, N., “Unstart Detection in a Simplified-Geometry Hypersonic Inlet-Isolator Flow,” \*Journal of Propulsion and Power\*, Vol. 26, No. 5, September-October 2010, pp. 1059-1071.](#)
- J31. Srikant, S., and Akella, M.R., “Precision Attitude Stabilization: Incorporating Rise and Fall Times in Gas-Based Thrusters,” *Journal of Guidance, Control, and Dynamics*, Vol. 34, No. 1, January-February 2011, pp. 317-323.
- J32. [Chunodkar, A.A., and Akella, M.R., “Attitude Stabilization with Unknown Bounded Delay in Feedback Control Implementation,” \*Journal of Guidance, Control, and Dynamics\*, Vol. 34, No. 2, March-April 2011, pp. 533-542.](#)
- J33. Mercker, T., and Akella, M.R., “Rigid-Body Attitude Tracking with Vector Measurements and Unknown Gyro Bias,” *Journal of Guidance, Control, and Dynamics*, Vol. 34, No. 5, Sept-Oct 2011, pp. 1474-1484.
- J34. Okamoto, M., and Akella, M.R., “Adaptive control schemes specially designed for systems with unknown orthogonal matrix parameters,” *Aerospace Science and Technology*, Vol. 18, No. 1, April-May 2012, pp. 63-68.
- J35. Valasek, J., Akella, M.R., Siddarth, A., Rollins, E., “Adaptive Dynamic Inversion Control of Linear Plants with Control Position Constraints,” *IEEE Transactions on Control Systems Technology*, Vol. 20, No. 4, July 2012, pp. 918-933.
- J36. [Srikant, S., and Akella, M.R., “Persistence Filters for Estimation: Applications to Control in Shared-Sensing Reversible Transducer Systems,” \*ASME Journal of Dynamic Systems, Measurement and Control\*, Vol. 134, No. 4, July 2012.](#)
- J37. Chunodkar, A., and Akella, M.R., “Stabilization of Nonlinear Systems with Unknown Time-Varying Feedback Delay,” *The Journal of the Astronautical Sciences*, Vol. 60, No. 3-4, 2013, pp. 278-302.
- J38. Mercker, T., and Akella, M.R., “Adaptive Estimation and Control Algorithms for Certain Independent Control Axis Misalignments,” *Journal of Guidance, Control, and Dynamics*, Vol. 37, No. 1, Jan.-Feb 2014, pp. 72-85.
- J39. Chunodkar, A., and Akella, M.R., “Switching Angular Velocity Observer Rigid-Body Attitude Stabilization and Tracking Control,” *Journal of Guidance, Control, and Dynamics*, Vol. 37, No. 3, May-June 2014, pp. 869-878.
- J40. [Hernandez, S., and Akella, M.R., “Lyapunov-Based Guidance for Orbit Transfers and Rendezvous in Levi-Civita Coordinates,” \*Journal of Guidance, Control, and Dynamics\*, Vol. 37, No. 4, July-Aug. 2014, pp. 1170-1181.](#)
- J41. Okamoto, M., and Akella, M.R., “Novel Potential-Function-Based Control Scheme for Non-Holonomic Multi-Agent Systems to Prevent the Local Minimum Problem,” *International Journal of System Science*, Vol. 46, No. 12, 2015, pp. 2150-2164.
- J42. [Hutchins, K.E., Akella, M.R., Clemens, N.T., Donbar, J.M., and Gogineni, S., “Experimental Identification of Transient Dynamics for Supersonic Inlet Unstart,” \*Journal of Propulsion and Power\*, Vol. 30, No. 6, 2014, pp. 1605-1612.](#)
- J43. Thakur, D., and Akella, M.R., “Gyro-Free Rigid-Body Attitude Stabilization Using Only Vector

- Measurements,” *Journal of Guidance, Control, and Dynamics*, Vol. 38, No. 4, 2015, pp. 811-818.
- J44. [Thakur, D., Hernandez, S., and Akella, M.R., “Spacecraft Swarm Finite-Thrust Cooperative Control for Common Orbit Convergence,” \*Journal of Guidance, Control, and Dynamics\*, Vol. 38, No. 3, 2015, pp. 478-488.](#)
- J45. [Thakur, D., Srikant, S., and Akella, M.R., “Adaptive Attitude-Tracking Control of Spacecraft with Uncertain Time-Varying Inertia Parameters,” \*Journal of Guidance, Control, and Dynamics\*, Vol. 38, No. 1, 2015, pp. 41-52.](#)
- J46. [Akella, M.R., Thakur, D., and Mazenc, F., “Partial Lyapunov Strictification: Smooth Angular Velocity Observers for Attitude Tracking Control,” \*Journal of Guidance, Control, and Dynamics\*, Vol. 38, No. 3, 2015, pp. 442-451.](#)
- J47. [Srikant, S., and Akella, M.R., “Stabilizing Controllers for Multi-Input Singular-Gain Systems,” \*Automatica\*, Vol. 54, 2015, pp. 279-283.](#)
- J48. Okomoto, M., and Akella, M.R., “Avoiding the Local-Minimum Problem in Multi-Agent Systems with Limited Sensing and Communication,” *International Journal of System Science*, Vol. 47, No. 8, 2016, pp. 1943-1952.
- J49. [Hernandez, S., and Akella, M.R., “A Closed-Loop Solution for Spacecraft Orbit Transfers Using the KS-Transformation,” \*Celestial Mechanics and Dynamical Astronomy\*, Vol. 125, No. 1, May 2016, pp. 107-132.](#)
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- C68. Almeida, M., and Akella, M.R., "Discrete Adaptive Angular Velocity Estimation – An Experimental Analysis," AAS/AIAA Space Flight Mechanics Meeting, Napa, CA, February 2016, AAS Paper Number 16-374.
- C69. Yang, S., Hashemi, K., and Akella, M.R., "Dynamically Scaled Adaptive Controllers for Aeroelastic Systems," American Control Conference, Boston, MA, July 2016.
- C70. Vanstone, L., Clemens, N.T., Akella, M.R., Gogineni, S., and Donbar, J., "Closed-Loop Control of Shock-Train Location in a Combusting Scramjet," AIAA SciTech Forum, Grapevine, TX, January 2017.
- C71. Almeida, M., and Akella, M.R., "Agile Autonomy: Towards Collision-Free Optimal Onboard Trajectory Generators for Vision-Enabled Quadcopters," AAS/AIAA Guidance and Control Conference, Breckenridge, CO, February 2017, AAS Paper Number 17-043.
- C72. Gulino, M., and Akella, M.R., "Spacecraft Proximity Formation Flying: A Homotopy Bridge from Energy Optimal to Fuel-Optimal Solutions Using Low-Thrust," AAS/AIAA Space Flight Mechanics Meeting, San Antonio, TX, February 2017, AAS Paper Number 17-336.
- C73. Almeida, M., and Akella, M.R., "Optimal Coplanar Orbit Transfers in Levi-Civita Coordinates," AAS/AIAA Space Flight Mechanics Meeting, San Antonio, TX, February 2017, AAS Paper Number 17-460.

- C74. Dong, H., and Akella, M.R., "Adaptive Fault-Tolerant Control for Spacecraft Formation Flying Ensuring Collision Avoidance," AAS/AIAA Space Flight Mechanics Meeting, San Antonio, TX, February 2017, AAS Paper Number 17-425.
- C75. Dong, H., and Akella, M.R., "Precision Attitude Stabilization: Inputs Scaled by Persistently Exciting Diagonal Matrices," AAS/AIAA Space Flight Mechanics Meeting, San Antonio, TX, February 2017, AAS Paper Number 17-428.
- C76. Dong, H., and Akella, M.R., "Stabilizing Controllers for Systems with Inputs Scaled by Persistently Exciting Diagonal Matrices," Accepted, American Control Conference, Seattle, WA, May 2017.
- C77. Almeida, M., and Akella, M.R., "New Numerically Stable Solutions for Minimum-Snap Quadcopter Aggressive Maneuvers," American Control Conference, Seattle, WA, May 2017.
- C78. Dong, H., and Akella, M.R., "Autonomous Rendezvous and Docking of Spacecraft Under 6-DOF Motion Constraints," 56<sup>th</sup> IEEE Conference on Decision and Control (CDC), Melbourne, Australia, December 2017.
- C79. Almeida, M., and Akella, M.R., "New Class of Attitude Controllers Guaranteed to Converge Within Specified Finite-Time," AAS John L. Junkins Dynamics and Control Symposium, College Station, TX, May 2018.
- C80. Almeida, M., Zanetti, R., Mortari, D., and Akella, M.R., "Real-Time Attitude Estimation of Non-Cooperative Space Objects Using Camera Measurements," AAS/AIAA Astrodynamics Specialist Meeting, Snowbird, UT, August 2018.
- C81. Tuggle, K., and Akella, M.R., "Information Theoretic Sensor Scheduling Under Communication Constraints," AAS/AIAA Astrodynamics Specialist Meeting, Snowbird, UT, August 2018.
- C82. Moghe, R., Zanetti, R., and Akella, M.R., "Covariance Matching Filter for IMU Bias Estimation," AAS/AIAA Astrodynamics Specialist Meeting, Snowbird, UT, August 2018.
- C83. Subramani, A.R., and Akella, M.R., "Uniform Exponential Stability Result for the Rigid Spacecraft Attitude Tracking Control Problem," IAA SciTech Forum Space Flight Mechanics Conference, Moscow, Russia, November 2018.
- C84. Moghe, R., Zanetti, R., and Akella, M.R., "Covariance Matching Kalman Filter for Observable LTI Systems," 57<sup>th</sup> IEEE Conference on Decision and Control (CDC), Miami, FL, December 2018.
- C85. Vanstone, L., Bosco, A., Saleh, Y., Akella, M.R., Clemens, N.T., and Gogineni, S., "Closed-Loop Control of Unstart in a Mach 1.8 Isolator," AIAA SciTech Forum, San Diego, CA, January 2019.
- C86. Canale, A., Mooij, E., and Akella, M.R., "Low-Thrust Real-Time Guidance Algorithm for Proximity Operations about an Asteroid," AIAA SciTech Forum, San Diego, CA, January 2019.
- C87. Jain, A., Singla, P., and Akella, M.R., "Stochastic Reachability Analysis for the Hypersonic Re-Entry Problem," AAS/AIAA Space Flight Mechanics Meeting, Maui, HI, January 2019.
- C88. Mirzaei, M., Singla, P., and Akella, M.R., "Optimal Feedback Control for the Hypersonic Re-Entry Problem," AAS/AIAA Space Flight Mechanics Meeting, Maui, HI, January 2019.
- C89. Dong, H., Hu, Q., and Akella, M.R., "Adaptive Attitude Tracking Control in the Absence of Persistence of Excitation," 27<sup>th</sup> International Symposium on Space Flight Dynamics (ISSFD), Melbourne, Australia, February 2019.
- C90. Dong, H., Hu, Q., and Akella, M.R., "Composite Adaptive Control for Robot Manipulator Systems," 5<sup>th</sup> CEAS Conference on Guidance, Navigation, and Control (Euro-GNC), Milano, Italy, April 2019.
- C91. Almeida, M. and Akella, M.R., "Real Time Minimum Snap Trajectory Generation for Quadcopters: Algorithm Speedup through Machine Learning," Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), Montreal, Canada, May 2019
- C92. Moghe, R., Zanetti, R., and Akella, M.R., "Covariance Matching Kalman Filter for Observable LTI Systems," 19<sup>th</sup> Yale Workshop and Adaptive and Learning Systems, Yale University, New Haven, CT, June 2019.
- C93. Dong, H., Hu, Q., and Akella, M.R., "Adaptive Control of Spacecraft Autonomous Rendezvous and Docking Under 6-DOF Motion Constraints," European Control Conference, Naples, Italy, June 2019.
- C94. Tuggle, K. and Akella, M.R., "Multi-Sensor Management Under Information Constraints," AAS/AIAA Astrodynamics Specialist Conference, Portland, ME, AAS Paper 19-663, August 2019.
- C95. Almeida, M. and Akella, M.R., "QUATERA: The Quaternion Regression Algorithm," AAS/AIAA Astrodynamics Specialist Conference, Portland, ME, August 2019.
- C96. Almeida, M. and Akella, M.R., "Time-Varying Feedback for Attitude Regulation within Prescribed Time," AAS/AIAA Astrodynamics Specialist Conference, Portland, ME, August 2019.

- C97. Olcay, E., Lohmann, B., and Akella, M.R., "An Information-Driven Algorithm in Flocking Systems for an Improved Obstacle Avoidance." In IECON 2019-45th Annual Conference of the IEEE Industrial Electronics Society (Vol. 1, pp. 298-304), October 2019.
- C98. Dhamani, N., Martin, G., Schubert, C., Singh, P., Hatten, N., and Akella, M.R., "Applications of Machine Learning and Monocular Vision for Autonomous On-Orbit Proximity Operations." In AIAA Scitech 2020 Forum (p. 1376), Orlando, FL, January 2020.
- C99. Vedantam, M., Akella, M.R., and Grant, M.J., "Multi-Stage Stabilized Continuation for Indirect Optimal Control of Hypersonic Trajectories." In AIAA Scitech 2020 Forum (p. 0472), Orlando, FL, January 2020.
- C100. Kaki, S., and Akella, M.R., "Uncertainty Quantification for a Batch Filter: Estimating the Angular Velocity of a Rigid-Body in Near Pure-Spin Condition," AAS/AIAA Astrodynamics Specialist Conference (Virtual), Lake Tahoe, CA, August 2020, AAS Paper Number 20-652.
- C101. Subramani, A.R., and Akella, M.R., "Adaptive Attitude Tracking Control: Preserving the Self-Reduction Property Through Time-Varying Feedback Gains," AAS/AIAA Astrodynamics Specialist Conference (Virtual), Lake Tahoe, CA, August 2020, AAS Paper Number 20-678.
- C102. Black, K., Shankar, S., Fonseka, D., Deutsch, J., Dhir, A., and Akella, M.R., "Real-time Flight-ready Non-Cooperative Spacecraft Pose Estimation Using Monocular Vision," 31<sup>st</sup> AAS/AIAA Space Flight Mechanics Meeting, February 2021, AAS Paper 21-283.
- C103. Moghe, R., Akella, M.R., and Zanetti, R., "Covariance Estimation Using Geometric Optimization on Symmetric Positive Definite Manifolds," 31<sup>st</sup> AAS/AIAA Space Flight Mechanics Meeting, February 2021, AAS Paper 21-353.
- C104. Arjun Ram, S., and Akella, M.R., "Precision Attitude Stabilization with Intermittent External Torque," 31<sup>st</sup> AAS/AIAA Space Flight Mechanics Meeting, February 2021, AAS Paper 21-402.
- C105. Schubert, C., Black, K., Fonseka, D., Dhir, A., Deutsch, J., Dhamani, N., Martin, G., and Akella, M.R., "A Pipeline for Vision-Based On-Orbit Proximity Operations Using Deep Learning and Synthetic Imagery," IEEE Aerospace Conference, April 2021.
- C106. Kaki, S., and Akella, M.R., "Pose Terrier: Image Based Pose Estimation and Filtering for Spacecraft Applications," AAS/AIAA Astrodynamics Specialist Conference, August 2021, AAS Paper 21-640.
- C107. Kaki, S., and Akella, M.R., "Spacecraft Rendezvous in Closed Keplerian Orbits Using Low Radial Thrust," AAS/AIAA Astrodynamics Specialist Conference, August 2021, AAS Paper 21-648.
- C108. Miller, A., and Akella, M.R., "Reference Trajectories for Arbitrary Track-to-Track Attitude Maneuvers," AAS/AIAA Astrodynamics Specialist Conference, August 2021, AAS Paper 21-753.
- C109. Arjun Ram, S., and Akella, M.R., "Angular Velocity Estimation Using Rate-Integrating Gyro Measurements," AAS/AIAA Astrodynamics Specialist Conference, August 2021, AAS Paper 21-699.
- C110. Vedantam, M., Akella, M.R., and Grant, M.J., "Jacobian Conditioned Two-Layer Stabilized Continuation for Computing Optimal Hypersonic Trajectories," Proceedings of the AIAA SciTech Forum, San Diego, CA, January 2022.
- C111. Lee, Y., Bakolas, E.A., and Akella, M.R., "Feedback Strategies for Hypersonic Pursuit of a Ground Evader," IEEE Aerospace Conference, Big Sky, MT, March 2022.
- C112. Miller, A.J., Lee, Y., Bakolas, E., and Akella, M.R., "Game-Theoretic Task Allocation for Multi-Satellite Earth Observation Problems, Proceedings of the AAS/AIAA Astrodynamics Specialist Conference, Charlotte, NC, August 2022, AAS Paper No. 22-152.
- C113. Kaki, S., and Akella, M.R., "Coplanar Circular-to-Circular Orbit Transfer Guidance with Constant Thrust," Proceedings of the AAS/AIAA Astrodynamics Specialist Conference, Charlotte, NC, August 2022, AAS Paper No. 22-641.
- C114. Arjun Ram, S.P., and Akella, M.R., "Adaptive Observers for Angular Velocity Estimation Using Rate-Integrating Gyroscopes," Proceedings of the AAS/AIAA Astrodynamics Specialist Conference, Charlotte, NC, August 2022, AAS Paper No. 22-724.
- C115. Miller, A.J., Mazenc, F., and Akella, M.R., "Attitude Control for Fractionated Space Systems," In Proceedings of the IFAC Aerospace Controls Conference, IIT Bombay, November 2022.
- C116. Vedantam, M., Gueho, D., Singla, P., and Akella, M.R., "Onboard Optimal Feedback Controller for Hypersonic Re-Target Scenarios," AIAA SciTech Forum, National Harbor, MD, January 2023.
- C117. Kaki, S., and Akella, M.R., "Inertia-free Pose and Angular Velocity Estimation Using Monocular Vision," In Proceedings of the AAS/AIAA Space Flight Mechanics Meeting, Austin, TX, January 2023, AAS Paper 23-210.

- C118. Kaki, S., and Akella, M.R., "Kinematic Batch Filter Formulation for Angular Velocity Estimation with Covariance Bounds," In proceedings of the AAS/AIAA Space Flight Mechanics Meeting, Austin, TX, January 2023, AAS Paper 23-209.
- C119. Basic, C.J., Johnson, W.R., and Akella, M.R., "Center of Gravity Estimation for Powered Flight Attitude Control," In proceedings of the AAS/AIAA Space Flight Mechanics Meeting, Austin, TX, January 2023, AAS Paper 23-362.
- C120. Hoobler, R., Wiberg, D., and Akella, M.R., "RGB-LiDAR Pipeline for 3D Bounding Box Estimation in Low SWaP-C Indoor Navigation Applications," In Proceedings of the American Control Conference, San Diego, CA, May 2023.
- C121. Soria-Carro, A., Hernandez, S., and Akella, M.R., "Rapid Response Missions to Interstellar Objects Using Lyapunov Wait-in-Orbit Constellations," In proceedings of the AAS/AIAA Astrodynamics Specialist Conference, Big Sky, MT, August 2023, AAS Paper 23-211.
- C122. Miller, A.J., and Akella, M.R., "Attitude Estimation with Intermittent Measurements for On-Orbit Assembly," In proceedings of the AAS/AIAA Astrodynamics Specialist Conference, Big Sky, MT, August 2023, AAS Paper 23-385.
- C123. Zinage, V., Arjun Ram, S.P., Bakolas, E., and Akella, M.R., "Semi-global Exponential Stability for Dual Quaternion Based Rigid-Body Tracking Control," AIAA SciTech Forum, Orlando, FL, January 2024.
- C124. Hoobler, R., and Akella, M.R., "Direct Multi-Thread Adaptive Control with Attracting Manifold Design," AIAA SciTech Forum, Orlando, FL, January 2024.
- C125. Vedantam, M., and Akella, M.R., "Indirect Optimal Control Bootstrapped via Suboptimal Policies," AIAA SciTech Forum, Orlando, FL, January 2024.
- C126. Donghae, K., and Akella, M.R., "Trust-based Sequential Monotonic Concession Protocol for Two-Player Task Negotiation," In Proceedings of the American Control Conference, Toronto, Canada, July 2024.
- C127. Hoobler, R., and Akella, M.R., "Multi-Thread Adaptation and Learning for Spacecraft Attitude Control," In Proceedings of the American Control Conference, Toronto, Canada, July 2024.
- C128. Soria-Carro, A., and Akella, M.R., "Long-Duration Explicit Symplectic Approximations and Uncertainty Propagation for Cislunar Regimes," AAS/AIAA Astrodynamics Specialist Conference, Broomfield, Colorado, Aug. 2024, Paper #24-258.
- C129. Lealiice, P., Kumagai, N., Akella, M.R., and Oguri, K., "Learning-Aided Chance-Constrained Control: Safety-Assured Control & Learning Under Spacecraft Mission Uncertainties," AAS/AIAA Astrodynamics Specialist Conference, Broomfield, Colorado, Aug. 2024, Paper #24-381.
- C130. Miller, A.J., and Akella, M.R., "Attitude and Gyro Bias Estimation with Intermittent Measurements," AAS/AIAA Astrodynamics Specialist Conference, Broomfield, Colorado, Aug. 2024, Paper #24-324.
- C131. Hagen, A., Vedantam, M., Akella, M.R., and Majji, M., "Stabilized Continuation with Integrated Chebyshev Collocation for Trajectory Optimization," AAS/AIAA Astrodynamics Specialist Conference, Broomfield, Colorado, Aug. 2024, Paper #24-394.
- C132. Preissman, Z., Singla, P., Akella, M.R., and Sharan, S., "Robust Trajectory Planning for Close Proximity Spacecraft Operations," AAS/AIAA Astrodynamics Specialist Conference, Broomfield, Colorado, Aug. 2024, Paper #24-306.
- C133. Preissman, Z., Singla, P., and Akella, M.R., "Nonlinear Optimal Feedback Control Design for Safe Rendezvous and Proximity Operations," Proceedings of the International Astronautical Federation at the 75<sup>th</sup> International Astronautical Congress, Milan, Italy, October 2024, Paper #IAC-24-C1-5-8-x88460.
- C134. Soria-Carro, A., and Akella, M.R., "Explicit Adaptive Symplectic Integrators for Cislunar Regimes," AAS/AIAA Space Flight Mechanics Meeting, January 2025, Paper #25-183.
- C135. Hoobler, R., and Akella, M.R., "Multi-Thread Adaptation for Rigid Spacecraft Attitude Control," AAS/AIAA Space Flight Mechanics Meeting, January 2025, Paper #25-397.
- C136. Vedantam, M., Akella, M.R., Sharan, S., and Singla, P., "Stabilized Continuation with Higher Order Sensitivities for Indirect Optimal Control Problems," AAS/AIAA Space Flight Mechanics Meeting, January 2025, Paper #25-446.
- C137. Hagen, A., Akella, M.R., Singla, P., and Eapen, R., "Stabilized Continuation for Transitioning Periodic Orbits from CR3BP to BCR4BP Problem Space," AAS/AIAA Space Flight Mechanics Meeting, January 2025, Paper #25-480.
- C138. Kim, D., and Akella, M.R., "Multilateral Monotonic Concession Protocol for Task Negotiation," American Control Conference, Denver, CO, July 2025.

- C139. Qi, D.C., Oguri, K., Singla, P. and Akella, M.R., "Optimal Statistical Moment Steering for Controlling Non-Gaussian Distributions," AAS/AIAA Astrodynamics Specialist Conference, Boston, MA, August 2025, Paper #25-611.
- C140. Boh, J., Funke, Z. and Akella, M., "A Game-Theoretical Exploration of L1/L2 Cislunar Space Situational Awareness Using Bayesian Games," Proceedings of the Advanced Maui Optical and Space Surveillance (AMOS) Technologies Conference, Maui, HI, September 2025.
- C141. Boh, J., Funke, Z. and Akella, M., "Bayesian Game-Theoretic Approaches for Cislunar Space Domain Awareness," Proceedings of the International Astronautical Federation at the 76<sup>th</sup> International Astronautical Congress, Sydney, Australia, October 2025, Paper #IAC-25-D1,IPB,22,x98560.
- C142. Lealiiee, P. and Akella, M.R., "Information-Driven Spacecraft Trajectory Planning for Inspection of Uncooperative Space Vehicles," AAS Daniele Mortari Astronautics Symposium, College Station, TX, December 2025.
- C143. Kim, D. and Akella, M.R., "Auction-Based Task Allocation Under Untruthful Agents," AIAA SCITECH 2026 Forum, Orlando, FL, January 2026.
- C144. Jung, E.D., Ramos, J.H., and Akella, M.R., "Tracking Non-Cooperative Targets Subject to Intermittent Measurements," AAS/AAA Guidance, Navigation, and Control Conference, Breckenridge, CO, January 2026, Paper #26-157.

### **Books (Authored/Co-Authored, Edited/Co-Edited)**

1. Bishop, R.H., Treder, A., Akella, M.R., and Gearhart, J.W., *Advances in Astronautical Sciences: Space Flight Mechanics*, American Astronautical Society, February 2007.
2. Alfriend, K.T., Akella, M.R., Hurtado, J.E., Juang, J., and Turner, J.T., *Adventures on the Interface of Mechanics and Control*, Tech Science Press, Duluth, GA, December 2012.

### **Reports (Authored/Co-Authored, Edited/Co-Edited)**

1. Texas Advanced Air Mobility Report, prepared and submitted for the Texas State Legislature in response to Senate Bill 2144, 88<sup>th</sup> Texas Legislature (2023) to assess current state law and any potential changes to state law that are needed to facilitate the implementation of advanced air mobility technology in Texas, September 2024 (<https://www.txdot.gov/content/dam/docs/division/avn/aama/aam-committee-final-report-2024.pdf>).

### **Book Chapters (Authored/Co-Authored, Edited/Co-Edited)**

1. Akella, M.R., "Adaptive and Nonlinear Control Design," *The Mechatronics Handbook*, Editor: Robert Bishop, CRC Press, February 2002.

### **ORAL PRESENTATIONS:**

1. Akella, M.R., "Rigid Body Attitude Tracking Without Angular Velocity Feedback," AAS/AIAA Spaceflight Mechanics Meeting, Clearwater, Florida, AAS 00-100, January 2000.
2. Akella, M.R., "On the Existence of Almost Periodic Orbits in the Radial Acceleration Problem," R. H. Battin Astrodynamics Symposium, College Station, TX, March 2000.
3. Akella, M.R., "Structured Adaptive Control for Rapidly Time-Varying Systems," Institute of Advanced Technologies (IAT), Austin, TX, April 2000.
4. Akella, M.R., "Some Interesting New Results in the Dynamics and Control of Aerospace Systems," UT Austin, Chemical Engineering Dept., September 2000.
5. Akella, M.R., Halbert, J.T., and Kotamraju, G.R., "Rigid Body Attitude Control with Inclinometer and Low-Cost Gyro Measurements," AIAA/AAS Spaceflight Mechanics Meeting, Santa Barbara, CA, AAS 01-140, February 2001.
6. Akella, M.R., and Broucke, R.A., "Anatomy of the Constant Low Radial Thrust Problem," *Journal of Guidance, Control, and Dynamics*, AIAA/AAS Spaceflight Mechanics Meeting, Santa Barbara, CA, AAS 01-208, February 2001.
7. Akella, M.R., Erengil, M.E., and McGregor, J., "Discrete Control of Kinetic Energy Projectile Trajectories," AIAA/AAS Spaceflight Mechanics Meeting, Santa Barbara, CA, Paper No. AAS 01-242, February 2001.
8. Akella, M. R., "Orbital Debris in Our Space," UT Honors Colloquium, High-School Outreach Program, Summer 2001.
9. Miwa, H., and Akella, M.R., "Global Adaptive Stabilization Using Output Feedback for Spacecraft

- Attitude Tracking,” presented at the AIAA/AAS Spaceflight Mechanics Meeting, San Antonio, TX, January 27-30, 2002.
10. Akella, M.R., “Rigid-Body Output Feedback Attitude Control Subject to Actuator and Rate Saturations,” 14<sup>th</sup> U. S. National Congress on Theoretical and Applied Mechanics, **Keynote Address**, Mini Symposium on Nonlinear Dynamics and Control, Blacksburg, VA, June 23 – 28, 2002.
  11. Akella, M.R., “Adaptive Control of Aerospace Systems – A Departure from the Certainty Equivalence Paradigm,” J.L. Junkins Astrodynamics Symposium, College Station, TX, May 2003.
  12. Akella, M.R., “Adaptive Control of Vision Guided Robotic Manipulators,” 12<sup>th</sup> Yale Workshop on Adaptive and Learning Systems, New Haven, CT, May 2003.
  13. Akella, M.R., “Cooperative Adaptive Control of Autonomous and Cooperating Networks of Dynamical Systems,” AFRL/VA Seminar at Wright Patterson AFB, October 31, 2003.
  14. Akella, M.R. and Subbarao, K., “Differentiator Free Proportional-Integral Controllers for the Rigid-Body Attitude Control Problem,” AIAA/AAS Spaceflight Mechanics Meeting, Maui, HI, February 2004.
  15. Wallsgrove, R.J. and Akella, M.R., “Globally Stabilizing Saturated Attitude Control in the Presence of Bounded Unknown Disturbances,” AIAA/AAS Spaceflight Mechanics Meeting, Maui, HI, February 2004.
  16. Akella, M.R., “High-Performance Adaptive Control Through Cascaded Dynamics and Attractive Manifolds,” AFRL/VS Seminar, Kirtland AFB, March 17, 2004.
  17. Akella, M.R., “Heterogeneous Sensor Networks for Detection of IEDs,” Invited participant, NSF Workshop on Detection and Defeat of IEDs, Washington, DC, June 5-6, 2006.
  18. Akella, M.R., and Seo, D., “A Separation Property for the Rigid Body Attitude Tracking Control Problem,” AAS/AIAA Space Flight Mechanics Meeting, Sedona, AZ, January 2007.
  19. Summers, T., and Akella, M.R., “A Non-Certainty Equivalence Approach to Decentralized Adaptive Control,” IEEE International Conference on System of Systems Engineering, San Antonio, TX, April 2007.
  20. Seo, D., and Akella M.R., “Adaptive Controllers for Rigid-Body Attitude Tracking Motions with Guaranteed Closed-Loop Transient Performance,” SES Meeting, College Station, TX, October 2007.
  21. Srikant, S., and Akella, M.R., “Persistence Filter Based Control for Systems with Time-Varying Control Gains,” AAS/AIAA Space Flight Mechanics Meeting, Galveston, TX, January 2008.
  22. Hatlelid, J., and Akella, M.R., “Control Theory for Non-Affine Systems with Applications to Unstart Control in Hypersonic Inlets,” AAS/AIAA Space Flight Mechanics Meeting, Galveston, TX, January 2008.
  23. Akella, M.R., “Decentralization, Consensus Management, and Controller Design: Applications to Networks of Autonomous Systems,” Invited Seminar, Institute of Advanced Technology, The University of Texas at Austin, May 2008.
  24. Summers, T., and Akella, M.R., “Coordinated Stand-off Tracking of Moving Targets,” AIAA Guidance Navigation and Control Conference, Honolulu, HI, August 2008.
  25. Chunodkar, A., and Akella, M.R., “Attitude Stabilization with Network Delay in Feedback Control Implementation,” AIAA Guidance, Navigation, and Control Conference, Chicago, IL, August 2009.
  26. Chunodkar, A., Summers, T.H., and Akella, M.R., “Spacecraft Attitude Synchronization in the Presence of Unknown Communication Delays,” Space Flight Mechanics Meeting, San Diego, CA, February 2010.
  27. Chunodkar, A., and Akella, M.R., “Attitude Stabilization with Unknown Time-Varying Delay in Feedback Control Implementation,” Space Flight Mechanics Meeting, San Diego, CA, February 2010.
  28. Srikant, S., and Akella, M.R., “Persistence Based Torque Controllers for Precision Attitude Stabilization in Small Satellites,” Space Flight Mechanics Meeting, San Diego, CA, February 2010.
  29. Escobar-Alvarez, H., Akella, M.R., and Bishop, R.H., “Geometrical Configuration Comparison of Redundant Inertial Measurement Units,” AIAA/AAS Space Flight Mechanics Meeting, New Orleans, LA, February 2011.
  30. Mercker, T., and Akella, M.R., “Adaptive Attitude Tracking Control in Presence of Inertia Uncertainties and Gyro-Bias Errors,” AIAA/AAS Space Flight Mechanics Meeting, New Orleans, LA, February 2011.
  31. Srikant, S., and Akella, M.R., “Persistence Filters for State Observation and Feedback Control in Shared-Sensing Based Reversible Transducer Systems,” International Conference on Computational and Experimental Engineering & Sciences, Nanjing, China, April 2011.
  32. Akella M.R., “Swarm IMU Configuration Options for Morpheus 1.5,” NASA ALHAT Navigation Technical Interchange Meeting, Charles Stark Draper Laboratory, Boston, MA, July 13-14, 2011.
  33. Hernandez, S., Akella, M.R., and Ocampo, C., “Lyapunov Based Elliptical to Circular Orbit Transfers in Levi-Civita Coordinates,” Jer-Nan Juang Astrodynamics Symposium, College Station, TX, June 2012, AAS Paper No. 12-616.

34. Chunodkar, A., and Akella, M.R., "Stabilization of Nonlinear Systems with Unknown Time-Varying Feedback Delay," Jer-Nan Juang Astrodynamics Symposium, College Station, TX, June 2012, AAS Paper No. 12-608.
35. Akella, M.R., "Lyapunov Strictification and Filter Embedment: Powerful New Tools for High-Performance Control Design," Texas A&M University Aerospace Engineering Seminar Series (Invited), November 2012.
36. Akella, M.R., "Strictification Techniques for Controlling High-Performance Aerospace Systems," University of Illinois at Urbana-Champaign, Aerospace Engineering Seminar (Invited), Spring 2013.
37. Akella, M.R., "Strictification and Filter Embedment Schemes for Controlling High-Performance Aerospace Systems," TU-Delft, The Netherlands, Space Systems Engineering Seminar (Invited), March 2013.
38. Akella, M.R., "Controlling High-Performance Aerospace Systems through Lyapunov Strictification," Surrey Space Center, Guildford, United Kingdom, Cybernetics Engineering Seminar (Invited), Spring 2013.
39. Akella, M.R., "Strictification and Filter Embedment Schemes for Controlling High-Performance Aerospace Systems," Imperial College, London, United Kingdom, Power Systems and Controls Seminar, March 2013.
40. Akella, M.R., "Strictification and Filter Embedment Schemes for Controlling High-Performance Aerospace Systems," Milan Polytechnic, Milan, Italy, Electrical Engineering Seminar, March 2013.
41. Akella, M.R., "Strictification and Filter Embedment Schemes for Controlling High-Performance Aerospace Systems," Norwegian University of Science and Technology, Trondheim, Norway, Cybernetics Engineering Seminar (Invited), March 2013.
42. Akella, M.R., "Adaptation, Uncertainty Propagation, and Closed-Loop Guidance for Rendezvous, Orbit Transfers," NASA Johnson Space Center, Technical Interchange Meeting, May 2013.
43. Akella, M.R., "Finite-Thrust Orbit Transfers to any Circular-Equatorial Orbit Using Lyapunov-Based Feedback Control," Proc. 5<sup>th</sup> International Conference on Spacecraft Formation Flying Missions and Technologies, Munich, Germany, May 2013.
44. Akella, M.R., "From Weak to Strict Lyapunov Functions: Powerful New Control Methods for Agile Aerospace Systems," University at Buffalo, Mechanical and Aerospace Engineering Seminar (Invited), Buffalo, NY, November 2013.
45. Akella, M.R., "Lyapunov Direct Method Takes a Spiral Route," Air Force Research Laboratory, Space Vehicles Directorate, Kirtland AFB, Summer Seminar Series (Invited), Albuquerque, NM, July 2014.
46. Akella, M.R., "Spiral Pathways to Lyapunov Direct Method and Aerospace Applications," Invited Seminar, Beihang University, Beijing, China, November 2014.
47. Akella, M.R., "Lyapunov Methods for Control of Autonomous Aerospace Systems," Invited Speaker, Texas Systems Day, University of Texas at Dallas, March 2015.
48. Akella, M.R., "Energy Conserved Planar Motion: The Flight Direction Angle Always Admits an Analytical Solution," **Keynote Speaker**, International Conference on Computational and Experimental Engineering and Sciences, Reno, NV, July 2015.
49. Akella, M.R., "Speed-Boosted Adaptation for Control of Autonomous Aerospace Systems," Rutgers University, Mechanical and Aerospace Engineering Seminar (Invited), November 2015.
50. Akella, M.R., "New Insights into Energy Conserved Planar Motion," Beihang University, Department of Electrical Engineering (Invited), Beijing, China, June 2016.
51. Akella, M.R., "Speed-Boosted Adaptation for Control of Autonomous Aerospace Systems," Indian Institute of Science, Aerospace Engineering Seminar (Invited), Bangalore, India, August 2016.
52. Akella, M.R., "Energy Conserved Planar Motion has a First Integral," Indian Institute of Technology (Bombay), Systems and Control Seminar (Invited), Mumbai, India, August 2016.
53. Akella, M.R., "Speed-Boosted Adaptation for Control of Autonomous Aerospace Systems," Nanyang Technological University, Electrical Engineering Seminar (Invited), Singapore, August 2016.
54. Akella, M.R., "Autonomous Space Systems: Bridging the Trust Gap," University of Sydney, School of Aerospace, Mechanical, and Mechatronic Engineering (Invited), Sydney, Australia, December 2016.
55. Akella, M.R., "Dynamic Adjustments to Feedback Gains: New Theoretical Tools for Controlling Autonomous Aerospace Systems," McGill University, Department of Mechanical Engineering (Invited), Montreal, Canada, January 2017.
56. Akella, M.R., "Agile Autonomy: Onboard Adaptive Solutions for High-Performance Aerospace Systems," Invited Seminar, Chinese Academy of Sciences, Technology and Engineering Center for Space Utilization, Beijing, China, April 2017.

57. Akella, M.R., "Differential Flatness, Convex Optimization, and Lyapunov Guidance for Autonomous Space Vehicles," AFRL Summer Seminar Series (Invited), Air Force Research Laboratory (Space Vehicles Directorate), Kirtland AFB, July 2017.
58. Akella, M.R., "Agile Autonomous Aerial Robotics," Invited Seminar, Monash Technology Incubator Workshop, Melbourne, Australia, December 2017.
59. Akella, M.R., "Autonomous Rendezvous and Docking of Spacecraft Under 6-DOF Motion Constraints," Invited Seminar, Politecnico di Milano, Italy, February 2018.
60. Akella, M.R., "Building Trust for Autonomous Robotics," **Keynote Lecture**, Dynamic Connections DC-2018 Conference, Palm Springs, CA, June 2018.
61. Akella, M.R., "Dynamic Scaling for High-Performance Adaptive Control of Space Systems," **Highlight Lecture**, International Astronautics Association (IAA) SciTech Forum, Moscow, Russia, November 2018.
62. Akella, M.R., "Robust Autonomy: Learning, Perception, and Trust for Aerospace Systems," **Plenary Lecture**, EuroGNC Conference, Milano, Italy, April 2019.
63. Akella, M.R., "Building Trust through Learning and Exploration," **Keynote Lecture**, U.S. Army Mad Scientist Conference, Austin, TX, April 2019.
64. Akella, M.R., "Stabilized Continuation and Machine Learning Applications for Autonomy in Hypersonics," Invited Lecture, Sandia National Laboratories – Autonomy for Hypersonics Campaign, Albuquerque, NM, April 2019.
65. Akella, M.R., "Reliable Autonomy for Aerospace Robotics: Perception, Learning, and Trust," **Keynote Lecture**, IFAC-ACODS Conference, IIT Madras, Chennai, India, February 2020.
66. Akella, M.R., "Robust Adaptive Control for Autonomous Space Vehicle Proximity Operations," IEEE Distinguished Lecture, Bangalore, India, February 2020.
67. Akella, M.R., "Indirect Methods Aiding Machine Learning for Real-Time Trajectory Generation," Invited Lecture (Virtual), Sandia National Laboratories – Autonomy for Hypersonics Campaign, Albuquerque, NM, August 2020.
68. Akella, M.R., "Mechanics Inspirations for Learning and Control," **Brouwer Award Plenary Lecture**, AAS/AIAA Astrodynamics Specialist Conference (Big Sky – Virtual), August 2021.
69. Akella, M.R., "Onboard Autonomy for Cislunar Space Missions," Space Domain Awareness Workshop (invited lecture), Texas A&M University, College Station, TX, November 2021.
70. Akella, M.R., "Electric Flight Reality," Army Futures Command VERTEX-2022 (invited), Capital Factory, Austin, TX, April 2022.
71. Akella, M.R., "Path-Planning Under Uncertainty for Hypersonic Flight Systems," Sandia Autonomy for Hypersonics Field Day (invited talk), Albuquerque, NM, July 2022.
72. Akella, M.R., "Relative Pose Estimation Using Monocular Vision for Spacecraft Proximity Operations," COMET-ORB Workshop, European Space Agency (invited talk), June 2023.
73. Akella, M.R., "Learning and Robust Perception for Aerospace Autonomy," University of Houston, Department of Mechanical and Aerospace Engineering, Distinguished Departmental Seminar Series (invited talk), Houston, TX, October 2023.
74. Akella, M.R., "Sub-Modularity Measures for Learning and Robust Perception in Aerospace Autonomy," University of Louisiana, Control and Optimization Seminar Series (Invited), Baton Rouge, LA, November 2023.
75. Akella, M.R., "Learn, Trust, and Optimize: Scalable Tasking for In-Space Operations," **Keynote Lecture**, IEEE SPACE-2024 Conference, Bangalore, India, July 2024.
76. Akella, M.R., "Learning and Optimization for In-Space Operations with Safety Guarantees," **Keynote Lecture**, 75<sup>th</sup> Annual Meeting of the Aeronautical Society of India, Pune, India, January 2025.
77. Akella, M.R., "Learning and Coordination for Aerospace Autonomy," Texas A&M University, Department of Aerospace Engineering (invited talk), College Station, TX, October 2025.
78. Akella, M.R., "Learning and Coordination for Aerospace Autonomy," University of Illinois at Urbana Champaign, Department of Aerospace Engineering (invited talk), Urbana, IL, November 2025.
79. Akella, M.R., "Coordination and Sub-Modularity for In-Space Operations," **Keynote Lecture**, ISSE International Conference on Systems Approach in Control Architecture and Design, Hyderabad, India, December 2025.
80. Akella, M.R., "Learning and Coordination for Aerospace Autonomy," Iowa State University, Department of Aerospace Engineering (invited talk), Ames, IA, March 2026.
81. Akella, M.R., "Opinion Dynamics, Learning, Trust, and Control for Autonomous Space Systems," **Plenary Lecture** (von Kármán Astronautics Award), AIAA ASCEND Forum, 2026.

**News and Media Mentions:**

- M1. The Daily Texan, November 2015, “UT UAV team designs drones for research, rescue,” <https://thedailytexan.com/2015/11/13/ut-uav-team-designs-drones-for-research-rescue/>
- M2. National Defense Magazine, May 2019, “Army Uses Mad Scientist Gathering to Explore Emerging Technologies,” <https://www.nationaldefensemagazine.org/articles/2019/5/31/army-uses-mad-scientist-gathering-to-explore-emerging-technologies>
- M3. Lockheed Martin, Center for Innovation (“The Lighthouse”), Suffolk, VA, September 2019, “Unmanned Air Vehicles: Autonomous Path Planning and Collision Avoidance” <https://youtu.be/WYA4m9ZVZ1I>
- M4. UT News, December 2021, “UT Austin Aids Army in Test of Drone Defenses in Downtown Austin,” <https://news.utexas.edu/2021/12/21/ut-austin-aids-army-in-test-of-drone-defenses-in-downtown-austin/>
- M5. Austin American Statesman, February 2024, “Dreams come true: How a UT team created guidance for first US moon landing in 50 years,” <https://www.statesman.com/story/news/local/2024/02/26/odysseus-moon-landing-2024-ut-university-of-texas-team-help-cockrell-school-of-engineering/72713749007/>
- M6. UT News, April 2024, “UT’s First Texas Defense Research Symposium Focuses on AI and Autonomous Systems,” <https://news.utexas.edu/2024/04/30/uts-first-texas-defense-research-symposium-focuses-on-ai-and-autonomous-systems/>
- M7. Times of India, October 2024, “Celestial Body Named After NIT-C Alumnus,” [https://timesofindia.indiatimes.com/city/kozhikode/asteroid-named-after-nit-c-alumnus-professor-maruthi-akella/amp\\_articleshow/114597248.cms](https://timesofindia.indiatimes.com/city/kozhikode/asteroid-named-after-nit-c-alumnus-professor-maruthi-akella/amp_articleshow/114597248.cms)
- M8. KVUE News, November 2024, “Why an Austin-area company’s lunar lander is key to NASA’s moon missions,” <https://www.kvue.com/article/news/local/nasa-moon-mission-january-2025-spacex-firefly-aerospace/269-018efd82-7759-4d9a-b733-3c46c785394c>
- M9. Fox 7 Austin, December 2024, “Asteroid named after University of Texas professor,” <https://www.fox7austin.com/news/university-texas-professor-asteroid>
- M10. Texas Engineer, 2024-25, “Making a Moon Mission,” <https://magazine.engr.utexas.edu/2024/making-of-a-moon-mission>
- M11. KXAN News, December 2024, “It is wild! Asteroid named for University of Texas professor,” <https://www.kxan.com/news/science/it-is-wild-asteroid-named-for-university-of-texas-professor/>
- M11. UT News, January 2025, “UT leads Defense Research in Robotics,” <https://news.utexas.edu/2025/01/29/ut-leads-defense-research-in-robotics/>

**GRANTS AND CONTRACTS**

1. “Control Law Development for Tethered Formation Flying,” NASA/GSFC, Principal Investigator, \$25K, 7/00 – 6/01.
2. “Modeling and Simulation of Three-Dimensional Hypervelocity Flight Trajectories,” Institute for Advanced Technologies, Principal Investigator, \$220K, 9/00 – 8/03.
3. “Lockheed Martin Technology Innovation Grant,” Principal Investigator \$5K, 11/01-10/02.
4. “Feedback Control of Autonomous Robotic Systems,” UT Austin Summer Research Assignment (SRA) Award, Principal Investigator, \$20K, 6/02-7/02.
5. “Dynamic Models for Flapping Wing Microair Vehicles Derived from Hummingbird Flight,” Texas ARP, Principal Investigator, \$241,336, 1/2002 - 8/2004.
6. “Chained Observers for Control of Nonlinear Systems Subject to Measurement Delay,” NASA-GSFC, Principal Investigator, \$30K, 12/03-11/04.
7. “Adaptive Chain Observers for Controlling Cooperating Clusters of Nonlinear Delayed-Output Mechanical Systems,” NSF, Principal Investigator, \$130K, 08/04-07/06.
8. “Experimental/Computational Studies of Combined cycle Propulsion: Physics and Transient Phenomena in Inlets and Scramjet Combustors,” AFOSR Multi University Research Initiative, \$5million, Co-Principal Investigator, (Akella’s portion, \$500K), 6/04-11/09.
9. “Algorithm Design for Mobile Heterogenous Sensor Networks with Applications to Improvised Explosive Device Detection and Surveillance,” NSF, Principal Investigator, \$199K, 8/05-2/08.
10. “DARPA: Dynamic Tactical Targeting (DTT) in a Box,” DARPA Pre-Seedling, \$25K, Co-Principal Investigator, (Akella’s portion, \$10K), 3/06-2/07.
11. “Chained Observers for Control of Distributed Space Systems Subject to Internal Communication and Actuation Delays,” Principal Investigator, AFRL Space Vehicles Directorate, \$75K, 06/08-12/09.

12. "Sensor Swarms for Autonomous Atmospheric Operations," Principal Investigator, NASA Johnson Space Center, \$289K, 10/09-09/11, \$135K, 10/11-09/12, \$50K, 10/12-08/14.
13. "Tracking of Resident Space Objects with Covariance Realism," Principal Investigator, AFRL STTR Phase 1 Contract (with Emergent Space Technologies Inc.), \$58,906, 04/10-02/11.
14. "ALHAT Navigation," Principal Investigator, NASA Johnson Space Center, \$154K, 10/10-12/13.
15. "Closed-Loop Control of Unstart in Scramjets: Development of Tools for Optimal Design of Sensors and Actuators," Co-Principal Investigator (joint with Prof. Noel Clemens, UT Austin), Air Force SBIR Phase 1 (with Spectral Energies Inc.), \$33K (Akella's portion: \$15K), 02/11-09/11.
16. "COPERNICUS: Trajectory Design and Optimization System," Co-Principal Investigator (joint with Prof. Cesar Ocampo, UT Austin), NASA Johnson Space Center, \$265K (Akella's portion, \$115K), 10/10-06/13.
17. "Closed-Loop Control of Unstart in Scramjets: Development of Tools for Optimal Design of Sensors and Actuators," Co-Principal Investigator (joint with Prof. Noel Clemens, UT Austin), Air Force SBIR Phase 2 (with Spectral Energies Inc.), \$325K (Akella's portion: \$175K), 02/12-01/14.
18. "Efficient Sensor Management for Optimal Multi-Task Performance (EsMaTE)," Principal Investigator, Missile Defense Agency SBIR Phase 2 (with Knowledge Based Systems, Inc.), \$223K, 11/12-10-14.
19. "Design and Optimization for Plasma Flow Actuators," Co-Principal Investigator (joint with Prof. Noel Clemens, UT Austin), Air Force SBIR Phase 2 (with Creare Inc.), \$225K (Akella's portion: \$100K), 09/12-08/14.
20. "Unmanned Air System Architectures for Distributed Sensing Operations," Principal Investigator, NASA Goddard Space Flight Center, \$45K, 06/13-01/14.
21. "Active/Adaptive Flexible Motion Controls with Aeroservoelastic System Uncertainties," Principal Investigator, NASA Dryden Flight Research Center, \$135K, 09/13-08/16.
22. "Closed-Loop Control of Unstart in Scramjets: Development of Tools for Optimal Design of Sensors and Actuators," Principal Investigator (joint with Prof. Noel Clemens, UT Austin), Air Force SBIR Phase 2.5 (with Spectral Energies Inc.), \$250K (Akella's portion: \$175K), 02/14-12/15.
23. "A New Two-Course Sequence in Multidisciplinary Hands-on Projects in the Department of Aerospace Engineering and Engineering Mechanics," Principal Investigator, UT Austin, Cockrell School of Engineering Academic Development Funds, \$50,809, 09/14-08/15.
24. "Onboard Autonomy, Coordination, and Coverage Algorithms for Spacecraft Swarms," Principal Investigator, NASA Johnson Space Center, \$405K, 07/14-06/17.
25. "Fractionation Architectures for Coordinated Unmanned Aircraft Based Sensing Platforms," Principal Investigator (joint with Leidos Corporation and Carnegie Mellon University), DARPA-TTO, \$1.5M (Akella's portion: \$215K), 1.5 years, 08/14-02/16.
26. "Efficient Sensor Management for Optimal Multi-Task Performance (EsMaTE)," Principal Investigator, Missile Defense Agency SBIR Phase 2.5 (with Knowledge Based Systems, Inc.), \$125K, 6/15-6/16.
27. "Closed-Loop Control of Unstart in Scramjets: Development of Tools for Optimal Design of Sensors and Actuators," Principal Investigator (joint with Prof. Noel Clemens, UT Austin), Air Force SBIR Phase 2.5 (with Spectral Energies Inc.), \$525K (Akella's portion: \$265K), 11/15-03/17.
28. "Control, Navigation, and Guidance for Autonomous Spacecraft," Air Force Research Laboratories, Co-Principal Investigator (joint with Prof. Efstathios Bakolas, Honeywell, and Emergent), \$2M, 3 years (Akella's Share: \$50K), 01/16-12/18.
29. "Texas Aerial Robotics," Unrestricted Gift from General Dynamics Mission Systems, \$10K, 12/2016.
30. "Closed-Loop Control of Unstart in Scramjets: Development of Tools for Optimal Design of Sensors and Actuators," Principal Investigator (joint with Prof. Noel Clemens, UT Austin), Air Force SBIR Phase 3 (with Spectral Energies Inc.), \$650K (Akella's portion: \$325K), 11/16-03/18.
31. "Resilience and Self-Assessment Algorithms for Autonomous Space Systems," Principal Investigator, NASA Johnson Space Center, \$615K, 06/17-05/22.
32. "Collaborative Automated Mapping, Detection, and Tracking," Co-PI (joint with Prof. Todd Humphreys), Lawrence Livermore National Laboratories, \$165K, 06/17-05/18 (Akella's portion: \$80K).
33. "Texas Aerial Robotics," Unrestricted Gift from General Dynamics Mission Systems, \$20K, 12/2017, 12/2018.
34. "Adaptation and Learning with Neural Networks for Plug-and-Play Sensor Systems," Principal Investigator (joint with Prof. Todd Humphreys), General Dynamics Mission Systems, \$165K, 07/17-06/18 (Akella's portion: \$100K).
35. "Layered Software Architectures for Unmanned Aerial Vehicle Ground Control Systems," Principal Investigator, General Dynamics Mission Systems, \$270K, 08/17-07/18.
36. "A New Undergraduate Aerospace Engineering Course on Machine Games," Co-PI (joint with Prof. Todd

- Humphreys), UT Austin, Cockrell School of Engineering Academic Development Funds, \$50K, 09/17-08/18 (Akella's portion: \$20K).
37. "Rapid Real-Time Trajectory Generation for Autonomous Hypersonic Vehicles," Principal Investigator, Sandia National Laboratories, \$350K, 06/18-09/20.
  38. "Multivariant Drone Swarms for Autonomous Inspection of Aerospace Assets," Principal Investigator, Lockheed Martin, \$375K, 05/18-08/20.
  39. "Texas Aerial Robotics," Unrestricted Gift from Lockheed Martin Aeronautics, \$5K, 9/2018.
  40. "UT Austin eVTOL Prototype Demonstration," Principal Investigator, UT Austin Innovation Center, \$193K, 08/18-07/19.
  41. "SERPENT: Satellite Evaluation of Relative Pose Estimation of a Non-cooperative Target," Principal Investigator (joint with Prof. Brandon Jones), AFRL University Nanosatellite Program (UNP-10), \$220K (Akella's portion: \$110K), 01/19-11/21.
  42. "Advanced Teaming: Trust and Self-Organization for Coordinated Robotics," Principal Investigator, US Army Research office, \$1.00M, 09/19-08/22.
  43. "Assured Positioning, Navigation, and Timing for Autonomous Robotics," Co-PI (joint with Prof. Todd Humphreys), US Army Futures Command, \$1.5M (Akella's portion: \$500K), 09/19-08/22.
  44. "Autonomous Flight Software Verification and Validation for Electric Vertical Takeoff and Landing (eVTOL) Systems," Principal Investigator, Lift Aircraft, \$85K, 09/19-08/20.
  45. "Auto-tuning for Onboard Autonomy in Hypersonics," Principal Investigator, Sandia National Laboratories, \$200K, 10/20-09/22.
  46. "End-Game Maneuverability for Hypersonic Engagements," Principal Investigator, Lockheed Martin, \$270K, 10/20-10/22.
  47. "Multirotor First Response and EVAC Applications," Principal Investigator, US Air Force STTR Phase-1 Award (prime: Lift Aircraft), \$15K, 12/20-03/21.
  48. "Lunar Lander Attitude Dynamics: Flight Controls Analysis and Validation Studies," Principal Investigator, Intuitive Machines, \$495K, 05/21-05/26.
  49. "Satellite on Umbilical Line (SOUL) System," Principal Investigator (joint with Prof. Brandon Jones), US Air Force Rapid Innovation Fund Project (prime: Busek co., Inc.), \$90K (Akella's portion: \$45K), 06/20-06/22.
  50. "Advancing Modular Payload Use Case for E-VTOL Platform Through Electromagnetic Adherence and Computer Vision," Principal Investigator, US Air Force STTR Phase-1 Award (prime: Lift Aircraft), \$45K, 01/21-06/21.
  51. "Controllable Autorotating Payload Emplacement System," Co-Principal Investigator (PI: Prof. Jayant Sirohi), US Air Force STTR Phase-1 Award (prime: AeroLive), \$25K (Akella's portion: \$10K), 01/21-04/21.
  52. "Next-Generation Numerical Methods for High Fidelity Trajectory Generation of Hypersonic Vehicles," Co-Principal Investigator (lead university: Penn State, partnered by Texas A&M University and Sandia National Laboratories), University Consortium for Applied Hypersonics (UCAH) Award from the DoD Joint Hypersonics Transition Office, \$1.5M (Akella's portion: \$450K), 12/21-12/24.
  53. "Maverick Orbs: The Next Revolution in Aviation," Co-Principal Investigator (PI: Prof. Jayant Sirohi), US Air Force STTR Phase-1 Award (prime: FlightX), \$50K (Akella's portion: \$25K), 08/21-02/22.
  54. "Intelligent Autonomy and Adaptation for Next-Gen Air Vehicles," Principal Investigator, Lockheed Martin, \$620K, 10/21-12/24.
  55. "SERPENT: Satellite Evaluation of Relative Pose Estimation of a Non-cooperative Target," Co-Principal Investigator PI: Prof. Brandon Jones), AFRL University Nanosatellite Program (UNP-11), \$220K (Akella's portion: \$110K), 01/22-12/23.
  56. "Advancing Modular Payload Use Case for E-VTOL Platform Through Electromagnetic Adherence and Computer Vision," Principal Investigator, US Air Force STTR Phase-2 Award (prime: Lift Aircraft), \$250K, 05/22-09/23.
  57. "SWaP-C Optimized Visual Sensor System for Computer Vision Assisted RPO," Principal Investigator, US Air Force STTR Phase-1 Award under the Orbital Prime Program (prime: Turion Space), \$75K, 09/01/2022-01/15/2023.
  58. "Satellite On Umbilical Line System Active Debris Removal System (SOUL ADR) Development," Principal Investigator (joint with Dr. Brandon Jones), US Air Force STTR Phase-1 Award under the Orbital Prime Program (prime: Busek), \$75K (Akella's portion is \$37.5K), 09/01/2022-01/15/2023.
  59. "Decentralized Decision-Making and Objective Inference in Multi-Agent Missions," Co-Principal Investigator (PI: Dr. David Fridovich-Keil), Army Research Lab, Awarded, 10/22-09/25, \$600K (Akella's portion: \$150K).
  60. "Interoperable Cislunar Observation Network (ICON)," Principal Investigator (joint with Dr. Brandon Jones),

US Air Force STTR Phase-2 Award under the Orbital Prime Program (prime: Katalyst Space), \$110K (Akella's portion is \$55K), 09/01/2023-01/15/2025.

61. "Self-Organization and Trust for Coordinated Robotics," Principal Investigator, UTDD/US Army Research office, \$2.05M, 09/24-08/27.
62. "Characterizing Highways and Automated Navigation in Cislunar Environment (CHANCE)," Co-Principal Investigator (lead PI: Dr. Kathleen Howell, Purdue University), AFOSR, \$4.5M (Akella's portion is \$745K) 08/23-07/26.
63. "Space Strategic Technical Institute (SSTI) for In-Space Operations: Co-Principal Investigator and UT Austin Site Lead (overall PI: Dr. Robert Ambrose, Texas A&M University), AFRL, \$38M (UT Austin portion is \$5.85M; Akella's share is \$2.0M) 04/24-03/29.
64. "Autonomous Air Vehicle Operations Inside Closed and Cluttered Environments," Co-Principal Investigator (joint with Dr. Jayant Sirohi), Office of Naval Research SBIR Phase-2 Award, \$650K (Akella's portion is \$325K), 09/01/2024-08/31/2027.
65. "Multi-Thread Learning for Autonomous High-Performance Aircraft Operations," Principal Investigator, Lockheed Martin, \$320K, 01/25-12/26.
66. "GoAERO Prize," Principal Investigator (with Lift Aircraft), NASA University Innovation Award (Stage 2), \$450K, 02/25-06/26.

#### **CONTINUING EDUCATION:**

- National Teaching Effectiveness Institute (NETI) Workshop, by ASEE, St. Louis, MO, June 15-18, 2000.
- 12<sup>th</sup> Yale Workshop on Adaptive and Learning Systems, New Haven, CT, May 2003.
- Composeable Human Robotic Operations (CmHRO) Workshop held at US Navy's SPAWAR Systems Center, San Diego, CA in January 2005.
- Invited Participant, National Science Foundation Workshop on Detection and Defeat of IEDs, June 2006.
- Invited Participant, SenSOC Workshop, SPAWAR Systems Center, US Navy, San Diego, CA, October 2007.
- 1<sup>st</sup> Annual ASTRIA Workshop, Air Force Research Laboratory, Kirtland AFB, Albuquerque, NM, August 5-6, 2009.
- US-Ignite Global City Teams Challenge Workshop, National Institute of Standards and Technology, Gaithersburg, MD, March 2015.
- 19<sup>th</sup> Yale Workshop on Adaptive and Learning Systems, New Haven, CT, June 2019.

#### **PH.D. SUPERVISION COMPLETED:**

1. Miwa, Hideaki, August 2002, "Adaptive Output Feedback Controllers for a Class of Nonlinear Systems"
2. Seo, Dongeun, August 2007, "Noncertainty Equivalent Nonlinear Adaptive Control and its Application to Mechanical and Aerospace Systems"
3. Summers, Tyler, December 2010, "Cooperative Shape and Orientation Control of Autonomous Vehicle Formations"
4. Srikant, Sukumar, May 2011, "Persistence Filters for Controller and Observer Design in Singular Gain Systems"
5. Mercker, Travis, May 2012, "Adaptive Estimation and Control Algorithms for Certain Classes of Large-Scale Sensor and Actuator Uncertainties"
6. Chunodkar, Apurva, December 2012, "Switching-Observer Design, Consensus Management and Time-Delayed Control with Applications for Rigid-Body Attitude Dynamics"
7. Okamoto, Makiko, May 2014, "Novel Potential Function-Based Control Schemes for Nonholonomic Multi-Agent Systems to Prevent the Local Minimum Problem"
8. Thakur, Divya, August 2014, "Adaptation, Gyro-Free Stabilization, and Smooth Angular Velocity Observers for Attitude Tracking Control Applications"
9. Hernandez, Sonia, August 2014, "Low-Thrust Trajectory Design Techniques with a Focus on Maintaining Constant Energy"
10. Yang, Sungpil, May 2016, "Robustness Properties of Quaternion-Based Attitude Control Systems"
11. Hashemi, Kelley, August 2016, "Model Reference Adaptive Control for Nonminimum Phase Aerospace Systems"
12. Dong, Hongyang, December 2017, "Dual Quaternion Formalism for Path-Constrained Guidance in

- Autonomous Spacecraft Proximity Operations” (Co-Advisor for Visiting student from Beihang University)
13. Almeida, Marcelino, December 2019, “Quaternion Regression and Finite-Time Controllers for Attitude Dynamics”
  14. Tuggle, Kirsten, August 2020, “Model Selection for Gaussian Mixture Model Filtering and Sensor Scheduling” (co-advised with Prof. Renato Zanetti, ASE/EM Department, UT Austin)
  15. Moghe, Rahul, May 2021, “Adaptive Algorithms for Identification of Symmetric and Positive Definite Matrices” (co-advised with Prof. Renato Zanetti, ASE/EM Department, UT Austin)
  16. Subramani, Arjun Ram, May 2023, “Onboard Control, Tracking and Navigation for Autonomous Systems,” (co-advised with Prof. Renato Zanetti, ASE/EM Department, UT Austin)
  17. Kaki, Siddarth, August 2023, “Computationally Efficient Algorithms for Spacecraft Relative Navigation and Rendezvous”
  18. Meraglia, Salvatore, August 2023, “Learning-based Control for Aerospace Systems: Methods and Applications” (Co-Advisor for Visiting student from Politecnico di Milano)
  19. Vedantam, Mihir, August 2024, “Advancement of Numerical Continuation Techniques for the Indirect Optimal Control of Aerospace Systems”
  20. Hoobler, Richard, December 2025, “Multi-Threaded Attracting Manifold Adaptive Control for Aerospace Systems”
  21. Miller, Andrew, Spring 2026, “Attitude Estimation and Control of Space Systems under Structured Uncertainty”
  22. Kim, Donghae, Spring 2026, “Distributed Task Negotiation Under Deception”

#### **M.S. SUPERVISION COMPLETED:**

1. Wallsgrove, Robert, May 2004, “Disturbance Accommodating Saturated Attitude Control”
2. Summers, Tyler, Spring 2007, “Decentralized Non-Certainty Equivalence Adaptive Control of Large-Scale Interconnected Systems”
3. Okamoto, Makiko, Spring 2007, “Adaptive Control Schemes for Systems with Unknown Drift and Control Directions”
4. Doyle, James, August 2007, “Clustering Prediction for the ID-Based Clustering Algorithm”
5. Mercker, Travis, May 2008, “Self-Organization, Event-Detection, and Navigation Algorithms for Heterogeneous Wireless Sensor Networks”
6. Hatlelid, John, August 2008, “Feedback Control Design and Analysis for Unstart Stabilization in Hypersonic Inlets”
7. Chunodkar, Apurva, December 2009, “Attitude Dynamics Stabilization with Unknown Delay in Feedback Control Implementation,”
8. Escobar-Alvarez, Hector, December 2010, “Geometrical Configuration Comparison of Redundant Inertial Measurement Units”
9. Hutchins, Kelley, December 2011, “Detection and Transient Dynamics Modeling of Experimental Hypersonic Inlet Unstart”
10. Yang, Sungpil, December 2012, “Ensemble Kalman Filters for Navigation Using Swarm IMU Sensors”
11. Szmuk, Michael, December 2013, “Coordinated Unmanned Flight Algorithms”
12. Freeze, John, August 2014, “Non-Myopic Optimization Schemes for Sensor Management in Missile Tracking Applications”
13. Ashley, Jonathan, August 2014, “Experimental Closed-Loop Control of Unstart in Mach 1.8 Direct-Connect Hypersonic Wind-Tunnel”
14. Tuggle, Kirsten, May 2015, “Estimation of Angular Velocity Using a Single Fixed Camera”
15. Kollin, Emily, May 2015, “Autonomous Time-Optimal Spacecraft Rendezvous and Proximity Operations”
16. Gulino, Marco, May 2016, “A Homotopic Approach to Solve the Fuel Optimal Spacecraft Proximity Operations Problem”
17. Canale, Antonio, January 2018, “Low-Thrust Real-Time Guidance Algorithm for Proximity Operations about an Asteroid,” (Exchange student from TU-Delft)
18. Srnka, Evan, December 2018, “Plug-and-Play Architectures for Autonomous Navigation”
19. Canale, Antonio, December 2018, “Low-Thrust Real-Time Guidance Algorithm for Proximity Operations about an Asteroid”
20. Bell, James, May 2019, “Space Object Detection and Localization via Monocular Vision”
21. Subramani, Arjun Ram, December 2019, “Uniform Exponential Stability Result for the Rigid Spacecraft

- Attitude Tracking Control Problem”
22. Patel, Chirag, May 2020, “Analyzing and Monitoring GRACE-FO Star Camera Performance in a Changing Environment”
  23. Kaki, Siddarth, December 2020, “Estimating the Angular Velocity of a Rigid-Body in Near Pure-Spin Condition”
  24. Trask, Adam, May 2022, “Hypersonic Trajectories with Control Continuity Constraints for Adversarial Games”
  25. Wiberg, Dallin, May 2023, “Computationally Lightweight Vision Stack for Autonomous Aerial Robotics”
  26. Basic, Christopher, May 2023, “Center of Gravity Estimation for Powered Flight Attitude Control”
  27. Moreno, Alejandro, May 2023, “Vision Marker System for Autonomous Payload Delivery and Retrieval”
  28. Shiller, Kyle, May 2024, “Unknown Spacecraft Detection during Proximity Operations using Neural Networks”
  29. Hagen, Anna, May 2025, “Trajectory Design and Optimization via Differential Continuation Strategies for Cislunar Missions”

#### **POST-DOC SUPERVISION:**

1. De Dilectis, Francesco, “Closed-Loop Guidance and Optical Navigation for Spacecraft Autonomous Operations,” 06/15-05/16
2. Vedantam, Mihir, “Optimization and Learning for Aerospace Autonomy,” 09/24-03/25

#### **RESEARCH ENGINEER/SCIENTIST SUPERVISION:**

1. Cappel, Henry, “Advanced Teaming and Coordinated Autonomy,” 04/25-present

#### **PH.D. SUPERVISION IN PROGRESS**

Anand Agrawal (joint with Prof. Brandon Jones)  
 Edward Jung  
 Pete Lealiiee, Jr.  
 Anabel Soria-Carro  
 Akhilesh Mulgund  
 John Mitch Boh  
 Hongseok Kim  
 John Pye (joint with Prof. J-P Clarke)

#### **M.S. SUPERVISION IN PROGRESS**

Jiho Sim  
 Will Lipscomb  
 Taylor Stiffler  
 Andrew Martin  
 Robert Bennett  
 Miranda Lambert (joint with Prof. Brandon Jones)  
 Jeffrey Young  
 Hamza Mujtaba

#### **OTHER STUDENT RESEARCH COMMITTEES (Current)**

Ph.D. Committees – 14    M.S. Committees – 6

#### **OTHER RESEARCH SUPERVISION**

1. McGregor, John, Undergraduate Research Assistant, Control Law Development for KE Projectiles, 6/00 - 8/01.
2. Halbert, James, Undergraduate Research Assistant, Sensor Fusion Issues for Rigid Body Attitude Control, 9/00-5/01. Recipient of UT Undergraduate Research Fellowship and UT Co-op Award, Fall 2000.
3. Kurihara, Kenichiro, Undergraduate Research Assistant, Dynamic Models for Micro-Air Vehicles, 1/00-8/00.
4. Wallsgrove, Robert, Undergraduate Research Assistant, Adaptive Attitude Determination, 1/02-8/02.
5. Valdivia, Agustin, Undergraduate Research Assistant, Feedback Control of Plasma Processes, 9/02-12/03. Recipient of the UT Undergraduate Research Fellowship.
6. Alix-Williams, Darius, Undergraduate Research Assistant, Swarm Sensors, 06/10-08/10.
7. Rossman, Grant, Undergraduate Research Assistant, MEMS-IMU Hardware Integration and Calibration Studies, 01/10-8/10
8. Kish, Jason, Undergraduate Research Assistant, Swarm Sensors Rocket Payload Flight Experimentation,

- 04/11-05/12.
9. Kulkarni, Tejas, Undergraduate Research Assistant, Vision-Based Simultaneous Localization Experiments, 01/13-05/13.
  10. Raghavan, Chaaru, Undergraduate Research Assistant, Machine Games: Coordinated UAV Flight Experiments, 05/14-08/14.
  11. Cakalli, Sofokli, Undergraduate Research Assistant, Low-Thrust Guidance, 09/14-12/15.
  12. Verma, Akshans, Undergraduate Research Assistant, Path-Planning for Coordinated Unmanned Aircraft, 01/15-05/15.
  13. Leonardo, Gutierrez, Undergraduate Research Assistant, Robotic Battery Replacement for UAVs, 06/15-08/15.
  14. Bandi, Sasaank, Undergraduate Research Assistant, Autonomous Rovers, 07/15-08/15.
  15. Sriramprasad, Vishrudh, K-12 Intern, Mathematics and Methods in Astrodynamics, 06/15-08/15, 06/16-08/16.
  16. Lauffner, Nick, K-12 Intern, Autonomous Guidance and Control, 06/16-08/16.
  17. Zhang, Felix, Undergraduate Research Assistant, Omni-directional Robot Swarm Control, 05/16-05/18
  18. Janecka, Matt, Undergraduate Research Assistant, System Identification and Control, 05/17-04/18
  19. Martin, Gavin, Undergraduate Research Assistant, Computer Vision for Space Proximity Operations, 09/17-12/18
  20. Singh, Pratyush, Undergraduate Research Assistant, Computer Vision for Space Proximity Operations, 09/17-05/19
  21. Johnson, Eric, Undergraduate Research Assistant, Drone Swarms and Coordination, 06/18-05/19
  22. Miller, Ben, Undergraduate Research Assistant, Computer Vision for Space Proximity Operations, 06/19-05/20
  23. Brownback, Noel, Undergraduate Research Assistant, Drone Autonomy, 01/20-05/20
  24. Sabrina, Kiara, Undergraduate Research Assistant, Aerial Robotics Design, 02/20-05/20
  25. Deutsch, Jacob, Undergraduate Research Assistant, Aerial Robotics Design, Computer Vision for Space Proximity Operations, 9/20-05/21
  26. Dhir, Abhi, Undergraduate Research Assistant, Aerial Robotics Design, Computer Vision for Space Proximity Operations, 9/20-05/22
  27. Lealliee, Pete, Undergraduate Research Assistant, Autonomy and Learning for Safety Critical Applications, 01/22-05/22
  28. Gopalakrishnan, Vishal, Undergraduate Research Assistant, Space Robotics and Autonomy, 06/24-12/24
  29. Challa, Srinithya, Undergraduate Research Assistant, Perception for In-Space Operations, 06/24-05/25
  30. Mujtaba, Hamza, Undergraduate Research Assistant, Space Robotics and Autonomy, 06/24-08/25
  31. Guduguntla, Jyotsna, Undergraduate Summer Research Intern, Soft Robotics Actuation and Control, 05/25-08/25
  32. Patil, Abhiram, Undergraduate Research Assistant, Space Robotics and Autonomy, 01/26-
  33. Paruolo, Dominic, Undergraduate Research Assistant, Space Robotics and Autonomy, 01/26-

### Student Achievements and Major Recognitions:

- S1. James Halbert, UT Austin Undergraduate Research Fellowship, August 2002.
- S2. Makiko Okamoto, Amelia Earhart Fellowship, Zonta International, 2005-07.
- S3. Tyler Summers, **Fulbright Fellowship** (The Australian National University), 2007-09.
- S4. Travis Mercker, Department of Defense SMART Fellowship, 2010-13.
- S5. Travis Mercker, AAS John Breakwell Student Award, January 2011.
- S6. Sonia Hernandez, AAS John Breakwell Student Award, January 2013.
- S7. Sonia Hernandez, Amelia Earhart Fellowship, Zonta International, 2013-15.
- S8. Divya Thakur, AAS John Breakwell Student Award, August 2013.
- S9. Sungpil Yang, AAS John Breakwell Student Award, January 2016.
- S10. Marcelino Almeida, AAS John Breakwell Student Award, August 2019.
- S11. Siddarth Kaki, **NSF Graduate Research Fellowship**, 2019-22.
- S12. Siddarth Kaki, 20 Twenties Technology Leader Award, August 2019.
- S13. Kelley Hashemi, **NASA Leadership and Management Excellence Award**, 2020.
- S14. Travis Mercker, AFRL Sensor Directorate, Advanced Programs Division Leadership, 2020.

- S15. Tyler Summers, **NSF Career Award**, December 2021.
- S16. James Halbert, **Named DoD Lead Scientist for the AI Research Office**, August 2022.
- S17. Siddarth Kaki, **AAS John Breakwell Student Award**, January 2023.
- S18. Akhilesh Mulgund, **Department of Defense NDSEG Fellowship**, 2023-present.
- S19. Sonia Hernandez, **AAS Emerging Astrodynamacist Award**, August 2024.
- S20. Donghae Kim, Student Award, American Control Conference, Toronto, Canada, July 2024.
- S21. Sukumar Srikant, **Named Head of Systems and Control Department, IIT Bombay**, August 2024.
- S22. Sonia Hernandez, Navigation Chief for Blue Ring Flight1 at Blue Origin, April 2025.
- S23. Anand Agrawal, First Place Poster at Small Satellite Conference, August 2025.

**MARUTHI R. AKELLA**  
Aerospace Engineering and Engineering Mechanics  
The University of Texas at Austin

Maruthi Akella is a professor with the Department of Aerospace Engineering and Engineering Mechanics at The University of Texas at Austin (UT Austin) where he holds the Cockrell Family Endowed Chair in Engineering. He received his B. Tech (Honors) in Mechanical Engineering (1992) from the National Institute of Technology Calicut (formerly Calicut Regional Engineering College), M.E. (with Distinction) in Aerospace Engineering (1994) from the Indian Institute of Science, and Ph.D. in Aerospace Engineering (1998) from Texas A&M University. He is the founding director for the Center for Autonomous Air Mobility and the faculty lead for the Control, Autonomy, and Robotics area at UT Austin. Dr. Akella's research program encompasses control theoretic investigations of nonlinear and coordinated systems, vision-based sensing for state estimation, and development of integrated human and autonomous multivehicle systems. His research contributions led to high-impact applications for aerial robotics, high-speed flow-control systems, spacecraft formations, and computer vision. Maruthi Akella and his students contributed for the onboard guidance algorithm for the Intuitive Machines IM-1 mission – the first U.S. moon landing in more than 50 years since the Apollo era. His work was recognized through prestigious awards including the AIAA Mechanics and Control of Flight Award, the AAS Dirk Brouwer Award, the IEEE-CSS Award for Excellence in Aerospace Control, the Judith A. Resnik Space Award from the IEEE Aerospace and Electronic Systems Society, and the AIAA von Kármán Lecture in Astronautics Award.

During 2021-2022, Maruthi Akella served as the Technology lead facilitator for the Urban Air Mobility Advisory Committee established by the Texas State Legislature tasked to assess current state law and provide necessary recommendations for facilitating air mobility operations and infrastructure within the state. In October 2024, the International Astronomical Union designated asteroid number 5376 – a nearly 5-mile diameter-sized minor planet from the main asteroid belt – as “Maruthiakella” honoring Dr. Akella's contributions to “many successful applications in astrodynamics.”

Maruthi Akella is Editor-in-Chief for the Journal of the Astronautical Sciences and serves on the AAS Board of Directors. He is a Fellow of the IEEE, AIAA, and AAS, and holds the Academician rank with the International Academy of Astronautics.