

Maruthi R. Akella, Ph. D., P.E.

The University of Texas at Austin

Education

Ph.D., Aerospace Engineering, Texas A&M University, 1998

M.E. (with distinction), Aerospace Engineering, Indian Institute of Science, Bangalore, India, 1994

B. Tech (Hons), Mechanical Engineering, University of Calicut, India, 1992

Professional Experience

Dates	Employer or Affiliation	Position/Title
9/22-onwards	The Univ. of Texas at Austin	Cockrell Family Chair in Engineering #19
9/20-8/22	The Univ. of Texas at Austin	Ashley H. Priddy Centennial Professorship in Engineering
1/19 onwards	The Univ. of Texas at Austin	Founding Director, Center for Autonomous Air Mobility
9/17-8/20	The Univ. of Texas at Austin	E.P. Schoch Endowed Professorship in Engineering
9/16 onwards	The Univ. of Texas at Austin	Faculty Lead, Controls, Autonomy, and Robotics Area
9/15 onwards	The Univ. of Texas at Austin	Professor, Aerospace Engineering & Engineering Mechanics
9/14-8/17	The Univ. of Texas at Austin	Myron L. Begeman Faculty Fellowship
9/05-8/15	The Univ. of Texas at Austin	Associate Professor
9/99-8/05	The Univ. of Texas at Austin	Assistant Professor
1/99-8/99	Yale University	Post-doctoral Fellow, Center for Systems Science

Awards and Honors

- Fellow, American Institute of Aeronautics and Astronautics (AIAA), 2022
- Elected IEEE Fellow, 2021
- AAS Dirk Brouwer Award, 2020
- IEEE CSS Award for Technical Excellence in Aerospace Control, 2020
- Academician, International Academy of Astronautics, 2019
- Judith A. Resnik Space Award, IEEE Aerospace and Electronic Systems Society, 2015
- Distinguished Aerospace Alumni Award, Texas A&M University, 2015
- Mechanics and Control of Flight Award, American Institute of Aeronautics and Astronautics, 2014
- Fellow, American Astronautical Society, 2013
- Halliburton Young Faculty Award, The University of Texas at Austin, Cockrell School of Engineering, 2001
- John Breakwell Student Travel Award, American Astronautical Society, 1999

Professional Memberships, Service, and Synergistic Activities

- 2019-present: Editor-in-Chief, *The Journal of the Astronautical Sciences*
- 2019-present: Board of Directors, American Astronautical Society
- 2019-present: Member, EuroGNC Council of European Aerospace Societies
- 2017-2018: Chair, Spaceflight Mechanics Technical Committee
- 2017-present: Member, IEEE/AESS Judith A. Resnik Space Award Selection Committee
- 2016-present: Technical Editor, *IEEE Transactions on Aerospace and Electronic Systems*
- 2019: Associate Editor-at-Large, American Control Conference Technical Program Committee
- 2008-present: Associate Editor, *Journal of Guidance, Control, and Dynamics*
- 2013-2019: Associate Editor, *The Journal of Astronautical Sciences*
- 2018: General Chair, AIAA SciTech Forum, Space Flight Mechanics
- 2017-18, 2021-onwards: AIAA Society General Chair, American Control Conference
- 2015-2017: Chair, Dirk Brouwer Award Committee, American Astronautical Sciences
- Member, AIAA Guidance, Navigation, and Control Technical Committee, 2014-present
- Chair, Publication Committee, International Conference on Optimization and Control, 2012

Publications

- 88 peer-reviewed archival journal articles
- 116 conference papers, 2 books (edited), 1 book chapter (invited)
- h-index: 30 with 3581 citations (Google Scholar, August 2022)

(List of Representative Publications)

- Akella, M.R., "Vision-Based Adaptive Tracking Control of Uncertain Robot Manipulators," *IEEE Transactions on Robotics*, 21(4), pp. 748-753, August 2005.
- 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*, 32(1), Jan.-Feb. 2009, pp. 56-69.
- 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.
- Hernandez, S., and Akella, M.R., "Lyapunov-Based Guidance for Orbit Transfers and Rendezvous in Levi-Civita Coordinates," *Journal of Guidance, Control, and Dynamics*, 37(4), July-Aug. 2014.
- Srikant, S., and Akella, M.R., "Stabilizing Controllers for Multi-Input Singular-Gain Systems," *Automatica*, Vol. 54, 2015, pp. 279-283.
- Okamoto, M. and Akella, M.R., 2016. Avoiding the local-minimum problem in multi-agent systems with limited sensing and communication. *International Journal of Systems Science*, 47(8), pp.1943-1952.
- Yang, S., Akella, M.R., and Mazenc, F., "Dynamically Scaled Immersion and Invariance Adaptive Control for Euler-Lagrange Mechanical Systems," *Journal of Guidance, Control, and Dynamics*, 40(11), Nov. 2017.
- Dong, H., Hu, Q., and Akella, M.R., "Dual Quaternion Based Spacecraft Autonomous Rendezvous and Docking Under Six-Degree-of-Freedom Motion Constraints," *Journal of Guidance, Control, and Dynamics*, 41(5), 2018.
- Dong, H., Hu, Q., Akella, M.R., and Mazenc, F., "Anti-unwinding Control of Spacecraft with Forbidden Pointing Constraints," *Journal of Guidance, Control, and Dynamics*, Vol. 42, No. 4, 2018, pp. 822-835.
- Hu, Q., Tan, X., and Akella, M.R., "Reduced Attitude Control for Boresight Alignment with Dynamic Pointing Constraints," *IEEE/ASME Transactions on Mechatronics*, Vol. 24, No. 6, 2019, pp. 2942-2952.
- Subramani, A.R., and Akella, M.R., "Uniform Exponential Stability Result for the Rigid Spacecraft Attitude Tracking Control Problem," *Journal of Guidance, Control, and Dynamics*, Vol. 43, No. 1, 2020, pp. 39-45.
- 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," *Journal of Propulsion and Power*, Vol. 36, No. 1, 2020.
- Moghe, R., Zanetti, R. and Akella, M.R., 2019. Adaptive Kalman Filter for Detectable Linear Time-Invariant Systems. *Journal of Guidance, Control, and Dynamics*, 42(10), pp.2197-2205.
- Almeida, M., and Akella, M.R., "New Class of Attitude Controllers Guaranteed to Converge Within Specified Finite-Time," *The Journal of Astronautical Sciences*, Vol. 67, No. 2, 2020, pp. 552-570.
- Schubert, C., Black, K., Fonseca, D., Dhir, A., Deutsch, J., Dhamani, N., Martin, G. and Akella, M., 2021, March. A Pipeline for Vision-Based On-Orbit Proximity Operations Using Deep Learning and Synthetic Imagery. In *2021 IEEE Aerospace Conference (50100)* (pp. 1-15). IEEE.
- Moghe, R. and Akella, M., 2022. Projection Scheme and Adaptive Control for Symmetric Matrices with Eigenvalue Bounds. *IEEE Transactions on Automatic Control*, Published Online, DOI: 10.1.1109/TAC.2022.3153458.
- Kaki, S., Akella, M.R., and Mortari, D., "Angular Velocity and Covariance Estimates for Rigid Bodies in Near Pure-Spin Using Orientation Measurements," *The Journal of the Astronautical Sciences*, Vol. 69, May 2022, pp. 767-800.

Invited Seminars

6 plenary/keynote lectures, 62 invited talks