Rahul Radhakrishnan
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Research Interests	State estimation, Nonlinear filtering, Target tracking Estimation of state of charge (SoC) in battery systems, Finance
Education	Ph.D. in Electrical Engineering Indian Institute of Technology Patna, December 2018
	M.Tech in Control Systems National Institute of Technology Kurukshetra, July 2013
	B.Tech in Applied Electronics & Instrumentation Government Engineering College Calicut, August 2010
	12th from Marthoma Higher Secondary School, Pathanamthitta, Kerala State Board
	10th from Marthoma Higher Secondary School, Pathanamthitta, Kerala State Board

Thesis & Dissertation

- Rahul Radhakrishnan. *Nonlinear Filtering: Extensions and Application to Target Tracking Problems*, Indian Institute of Technology Patna, December 2018.

- Rahul Radhakrishnan. H_∞ *control of time delay systems: LMI approach*, National Institute of Technology Kurukshetra, 2013.

Training & Projects

- Company: Hindustan Organic Chemicals Limited, Kochi (March 2010)
  Work: Boiler three element drum level control using Yokogawa DCS system-CENTUM 3000

- Mini Project: Micro controller based IR sensing robot

Publications

Journals

- Ravi Khandelwal, Asfia Urooj, Rahul Radhakrishnan, "Parameterised State Estimation Approach for 2-Dimensional Underwater Bearings only Target Tracking", IFAC-PapersOnLine, vol. 55, no. 1, pp. 801-806, 2022.

- Rahul Radhakrishnan, Urooj Asfia, Shambhunath Sharma, "Gaussian sum state estimators for three dimensional angles-only underwater target tracking problems", IFAC-PapersOnLine, vol. 55, no. 1, pp. 333-338, 2022.

- Aastha Dak, <u>Rahul Radhakrishnan</u>, "Tracking and Interception of a Spiralling Ballistic Target on Reentry", IFAC-PapersOnLine, vol. 55, no. 1, pp. 339-334, 2022.

- Abhinoy K. Singh, Sumit Kumar, Nagendra Kumar, <u>Rahul Radhakrishnan</u>, "Bayesian Approximation Filtering with False Data Attack on Network", IEEE Transactions on Aerospace and Electronic Systems, vol. 58, no. 2, April 2022.

- <u>Rahul Radhakrishnan</u>, Abhinoy Kumar Singh, Shovan Bhaumik, Nutan Kumar Tomar, "Multiple sparse-grid Gauss-Hermite filtering", Applied Mathematical Modelling, Elsevier, Vol. 40, no. 7-8, pp. 4441-4450, April 2016.

- <u>Rahul Radhakrishnan</u>, Ajay Kumar Yadav, Paresh Date, Shovan Bhaumik, "A new method for generating sigma points and weights for nonlinear filtering", IEEE Control Systems Letters, vol. 2, no. 3, pp. 519-524, July 2018.

- <u>Rahul Radhakrishnan</u>, Shovan Bhaumik, Nutan Kumar Tomar, "Gaussian sum shifted Rayleigh filter for underwater bearings-only target tracking problems", IEEE Journal of Oceanic Engineering, Vol. 44, no. 2, pp. 492-501, April 2019.

- <u>Rahul Radhakrishnan</u>, Shovan Bhaumik, Nutan Kumar Tomar, "Continuous-discrete filters for bearings-only underwater target tracking problems", Asian Journal of Control, DOI: 10.1002/asjc.2011.

- Abhinoy Kumar Singh, <u>Rahul Radhakrishnan</u>, Shovan Bhaumik, Paresh Date, "Adaptive sparse-grid Gauss-Hermite filter", Journal of Computational and Applied Mathematics, Elsevier, vol. 342, pp. 305-316, Nov. 2018.

Conferences

- <u>Rahul Radhakrishnan</u>, Shovan Bhaumik, Nutan Kumar Tomar, "Continuous-discrete shifted Rayleigh filter for underwater passive bearings-only target tracking", *Asian Control Conference, ASCC, Gold Coast, Australia, 2017*.

- Ranjeet Kumar Tiwari, <u>Rahul Radhakrishnan</u>, Shovan Bhaumik, "Particle filter for underwater passive bearings-only target tracking with random missing measurements", *accepted in European Control Conference, ECC, Limassol, Cyprus, 2018*.

- <u>Rahul Radhakrishnan</u>, Abhinoy Kumar Singh, Shovan Bhaumik, Nutan Kumar Tomar, "Quadrature filters for underwater passive bearings-only target tracking", *Sensor Signal Processing for Defence (SSPD), Edinburgh, 2015*.

- <u>Rahul Radahkrishnan</u>, Shovan Bhaumik, Nutan Kumar Tomar, "Continuous-discrete quadrature filters for intercepting a ballistic target on reentry using seeker measurements", *Proc. of the Third IFAC International Conference on Advances in Control and Optimization of Dynamical Systems (ACODS), 2018*.

- Abhinoy Kumar Singh, <u>Rahul Radhakrishnan</u>, Shovan Bhaumik, Paresh Date, "Computationally efficient sparse-grid Gauss-Hermite filtering", *Indian Control Conference (ICC), IIT Guwahati, 2017*.

- <u>Rahul Radhakrishnan</u>, Manika Saha, Shovan Bhaumik, Nutan Kumar Tomar, "Ballistic target tracking and its interception using suboptimal filters on reentry", *Sixth International Symposium on Embedded Computing and System Design (ISED), IIT Patna, 2016*.

- <u>Rahul Radhakrishnan</u>, Abhinoy Kumar Singh, Shovan Bhaumik, Nutan Kumar Tomar, "IMM-cubature quadrature Kalman filter for manoeuvring target tracking", *Signal Processing, Informatics, Communication and Energy Systems (SPICES), NIT Calicut, 2015*.

Book chapter

- Urooj Asfia, <u>Rahul Radhakrishnan</u>, SN Sharma, "Three-Dimensional Bearings-Only Target Tracking: Comparison of Few Sigma Point Kalman Filters", *Communication and Control for Robotic Systems, Springer*, vol. 229, pp. 273-289, 2021.

- <u>Rahul Radhakrishnan</u>, Manika Saha, Shovan Bhaumik, Nutan Kumar Tomar, "Tracking and Interception of a Ballistic Target on Reentry Using Adaptive Gaussian Sum Quadrature Filters", *Communication and Control for Robotic Systems, Springer*, vol. 229, pp. 255-272, 2021.

- <u>Rahul Radhakrishnan</u>, Shovan Bhaumik, Nutan Kumar Tomar, Abhinoy Kumar Singh, "Bearing-only tracking using sparse-grid Gauss–Hermite filter", *Intelligent Computing and Applications, Springer*, pp. 349-356.

Membership in Professional bodies

Automatic Control & Dynamics Optimization Society (ACDOS)

Teaching Experience

- Assistant Professor in Department of Electronics and Communication Engineering, SRM Institute of Science and Technology, Chennai (June 2018 to January 2019)

Post Ph.D. Research Experience

- Post Doctoral Fellow, Department of Chemical Engineering, IIT Bombay (February 2019 to September 2019).

Research Supervision at SVNIT Surat

- Ph.D. Ongoing: 02 Completed: Nil
- M.Tech Ongoing: 03 Completed: 01

Short-term course/Workshops Organized

- Coordinator for TEQIP-III sponsored one week short term course on Advances in Control Systems Engineering and Applications organized at SVNIT Surat, during 23 – 27 September, 2020.

- Coordinator for TEQIP-III sponsored one week short term course on Advances in Control Systems Engineering and Applications organized at SVNIT Surat, during 24 – 28 February, 2021.

- Coordinator for National Workshop on Control & Automation: Recent Trends & Future, under Diamond Jubilee Celebration of SVNIT Surat, during 12-13 February, 2022.

Reviewer

- IEEE Sensors Journal

- IET Radar, Sonar & Navigation

- IEEE Transactions on Aerospace and Electronic Systems

- Asian Journal of Control

- IEEE Transactions on Automatic Control

- IEEE/CAA Journal of Automatica Sinica

- IEEE Control Systems Letters

List of Referees

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Head of Financial Mathematics
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