Susmita Bhattacharyya
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Education

Ph.D., Aerospace Engineering and Mechanics April 2012
University of Minnesota, Twin Cities, USA
Master of Engineering, Aerospace Engineering June 2004
Indian Institute of Science, Bangalore, India
Bachelor of Engineering (BE), Electrical Engineering (EE) June 2001
Jadavpur University, Kolkata, India

Professional Experience

Assistant Professor, Indian Institute of Technology (IIT) Kharagpur Feb 2016 - Present
Visiting Assistant Professor, IIT Kharagpur Oct 2015 - Feb 2016
Assistant Professor, IIT Bombay Aug 2015 - Sep 2015
Project Leader, Accord Software and Systems, Bangalore July 2014 - March 2015
Senior Systems Engineer, Accord Software and Systems May 2012 - June 2014
Research Assistant, University of Minnesota, USA May 2007 - April 2012
Teaching Assistant, University of Minnesota, USA Aug 2006 - May 2007
Scientist 'SC', Satellite Centre of Indian Space Research Organization, Bangalore Aug 2004 - May 2006
Research Assistant, Jadavpur University, Kolkata, India Feb 2002 - June 2002

Publications

- Refereed Journal Articles
  - Bhattacharyya, S., "A Computationally Efficient Kalman Filter-Based RAIM Algorithm for Aircraft Navigation with GPS and NavIC," *Measurement Science and Technology* Accepted, 2023, 30 pages (2022 impact factor 2.4)
  - Mute, D., and Bhattacharyya, S., "A Robust Signal Tracking Algorithm for GPS and NavIC Constellations," *GPS Solutions* Vol. 27, No. 3, July 2023, pp. 1 - 20 (2022 impact factor 4.9)
  - Bhattacharyya, S., "Performance Analyses of a RAIM Algorithm for Kalman Filter with GPS and NavIC Constellations," *Sensors* Vol. 21, No. 24, December 2021, pp. 1 - 30. (2021 impact factor 3.847)

- Bhattacharyya, S., Mute, D., "Kalman Filter-Based RAIM for Reliable Aircraft Positioning with GPS and NavIC Constellations," *Sensors*, Vol. 20, No. 22, November 2020, pp. 1 - 32. (2020 impact factor 3.576)
- Bhattacharyya, S., "Vector Loop Transfer Functions and Noise Bandwidths," *Navigation – Journal of the Institute of Navigation*, Vol. 65, No. 1, Spring 2018, pp. 55 - 72. (2020 impact factor 2.1)
- Bhattacharyya, S. and Gebre-Egziabher, D., "Kalman Filter-Based RAIM for GNSS Receivers," *IEEE Transactions on Aerospace and Electronic Systems*, Vol. 51, No. 3, July 2015, pp. 2444 - 2459. (2020 impact factor 4.102)
- Bhattacharyya, S. and Gebre-Egziabher, D., "Integrity Monitoring with Vector GNSS Receivers," *IEEE Transactions on Aerospace and Electronic Systems*, Vol. 50, No. 4, October 2014, pp. 2779 - 2793. (2020 impact factor 4.102)
- Bhattacharyya, S. and Gebre-Egziabher, D., "Vector Loop RAIM in Nominal and GNSS-Stressed Environments," *IEEE Transactions on Aerospace and Electronic Systems*, Vol. 50, No. 2, April 2014, pp. 1249 - 1268. (2020 impact factor 4.102)
- Bhattacharyya, S. and Gebre-Egziabher, D., "Development and Validation of Parametric Models for Vector Tracking Loops," *Navigation – Journal of the Institute of Navigation*, Vol. 57, No. 4, Winter 2010, pp. 275 - 295. (2020 impact factor 2.1)

- Articles in Conference Proceedings

  - Bhattacharyya, S., Mute, D. L., Gebre-Egziabher, D., "Kalman Filter-Based Reliable GNSS Positioning for Aircraft Navigation," *AIAA SciTech Forum*, San Diego, California, January 2019, pp. 1 - 27.
  - Bhattacharyya, S., "Kalman Filter-Based GNSS Integrity Monitoring," *Proceedings of the 29th International Technical Meeting of the Satellite Division of the Institute of Navigation (ION GNSS+ 2016)*, Portland, Oregon, September 2016, pp. 1736 - 1749.
  - Bhattacharyya, S., Adiga, V., P, Mahesh and Parto, C., "Accord's Multi-Constellation GNSS Simulator," *Aeronautical Society of India Conference on Satellite Navigation*, Bangalore, KA, India, April 2013, 4 pages.
  - Bhattacharyya, S. and Gebre-Egziabher, D., "Integrity Analysis of Vector Tracking Architecture," *Proceedings of the 23rd International Technical Meeting of the Satellite Division of the Institute of Navigation (ION GNSS 2010),* Portland, OR, Sep 2010, pp. 3152 - 3166.
  - Bhattacharyya, S. and Gebre-Egziabher, D., "Development and Validation of a Parametric Model for Vector Tracking Loops," *Proceedings of the 22nd International Technical Meeting of the Satellite Division of the Institute of Navigation (ION GNSS 2009),* Savannah, GA, Sep 2009, pp. 186 - 200.

- Bhattacharyya, S. and Mahapatra, P. R., "Different Optimal Filtering Approaches for Non-linear Systems," *National Workshop on Tactical Missiles and Guidance, Defence Research and Development Laboratory (DRDL),* Hyderabad, AP, India, March 2004, 6 pages.

Awards and Fellowships

- Accord's Excellence in Innovation Award, 2013.
- Bradford W. Parkinson Award from the Institute of Navigation, USA, in 2012 for graduate student excellence in Ph.D. thesis, which recognizes significant innovations in the field of GNSS Systems. The award is given to honor Prof. Parkinson, one of the key inventors of GPS.
- John A. & Jane Dunning Copper Fellowship in 2007 from the Department of Aerospace Engineering and Mechanics, University of Minnesota, Twin Cities, for outstanding academic performance.
- Ganesh Janani Devi Memorial Bronze Medal from Jadavpur University, Kolkata, for obtaining the highest aggregate score in Electrical Machines - considered most difficult of all subjects taught during the four-year EE program - at the BE Part I and Final Examination, 2000.

Professional Membership

- Member of the Institute of Navigation (ION), USA

Service

- Reviewed manuscripts for the following professional society journals:
  - IEEE Transactions on Aerospace and Electronic Systems
  - IEEE Communication Letters
  - Navigation – Jounal of the Institute of Navigation
  - Journal of Geodesy
  - IET Radar, Sonar and Navigation