

Department of Mechanical Engineering  
National Institute of Technology Karnataka  
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**K.R. Guruprasad**

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## RESEARCH INTERESTS

### **Dynamics and control**

**Robotics** – Kinematics, dynamics, control, and motion planning.

**Multi-agent (robot) systems** – Deployment, coverage, search, cooperative and distributed control

**Voronoi partition** – Application to multi-agent systems and sensor networks, distributed algorithms for Voronoi cell computation, generalization of Voronoi partition.

**Artificial Intelligence** – Artificial Neural Networks, Fuzzy logic and Fuzzy logic control, Reactive or Behavior-based systems, Group behavior and Distributed systems, distributed control systems

### **Location Optimization**

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## EDUCATION/ RESEARCH EXPERIENCE

**University of Nebraska, Omaha, USA** March 2011-May 2012  
Postdoctoral Research in Computer Science  
Research areas: Multi-robotic area coverage, Distributed computation of Voronoi partition, Boundary exploration of unknown terrain.  
Advisor: Professor Prithviraj Dasgupta

**Indian Institute of Science, Bengaluru, India** August 2005 – December 2008  
Ph.D. in Aerospace Engineering,  
Thesis title: Multi-agent search using Voronoi partition  
Advisor: Professor Debasish Ghose

**Indian Institute of Science, Bengaluru, India** August 1994 – December 1996  
MSc (Engg) in Mechanical Engineering  
Thesis title: Model Reference Learning Control using ANFIS  
Advisor: Professor Ashitava Ghosal

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## INDUSTRIAL EXPERIENCE

Worked as trainee engineer at the BPL electronics Ltd from 02/08/1993 to 11/07/1994.

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## TEACHING EXPERIENCE

Serving as a teaching faculty since October 2000 at the Department of Mechanical Engineering, National Institute of Technology Karnataka, Surathkal, INDIA. Serving as Associate Professor since September 2019.

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## Student guidance

### Research Guidance:

Sl No	Degree	Name	Thesis title	Year/Status	Guide/Co-Guide
1	PhD	Soumya S	Multi agent system inspired distributed control of a manipulator	2019	SOLE
2	PhD	Vishnu G Nair	Simultaneous Exploration and Coverage with Multiple Mobile Robots using Generalized Voronoi Partition	2019	SOLE
3	PhD	Jeane M D'SOUZA	Cooperative search with multiple quadcopter using downward facing cameras	2020	SOLE
4	PhD	Juttuka Vamsi Krishna	3D printing with a robotic manipulator	Ongoing	Dr. Navin Karanth P
5	PhD	D Yasawant Satya Prasad	To be decided	Ongoing	SOLE
6	MTech(R)	T.D Ranjitha	Complete competitive spanning tree coverage for	2015	SOLE

			mobile robots		
7	MTech(R)	D Marebal	Conceptualization, design, and fabrication of a simple 3d printed modular robotic manipulator	2017	SOLE

MTech Guidance:

SN	Name of student	Title	Year	Comment
1	Subramanya Prabhu	Design and development of autonomous robot and experiment on its multi-agent behaviour	2010	
2	Sandip A Lad	Design and development of fixed wing Mini UAV (MUAV)	2011	
3	Prajin K	Response of backup oxygen system to aircraft vibrations	2014	Industry
4	Vivek Kharwar	Dynamic analysis of steer-by-wire system	2014	Industry
5	Rishabh Rau	Ride comfort analysis of adaptive suspension system based on hybrid control strategy	2014	Industry
6	Siddhartha S Rao	Centroidal Voronoi configuration-based multi-UAV search using camera,	2014	
7	Deepak Mohan	Simulation of a modular quadcopter	2015	
8	Abhin E Reji	Mechanical design and fabrication of a modular quadcopter	2015	
9	Niharika S Bhardwaj	Implementation of spanning tree coverage path planning algorithm on Firebird V ground robot	2016	
10	Rahul P Raju	Deployment of multiple parrot ARDrone 2.0 quadcopters into a centroidal Voronoi configuration	2016	
11	Akash Mani	Deployment of multiple firebird v ground robot into a centroidal Voronoi configuration	2016	
12	Akshar Padman	Simulation of deploy and search strategy based on centroidal Voronoi configuration using ROS	2017	
13	M M Falaki	Combined coverage and exploration algorithm for ground robots	2017	
14	Ravikumar T	Designing of twist angle and link length adjustment modules of a modular manipulator,	2018	
15	Santosh S Bharadwaj	Optimal path planning for landmine and obstacle avoidance using a mobile robot2	2018	
16	Akash Prakash	Connecting Images with Natural Language - A probabilistic way	2019	
17	D Yasawant Satya Prasad	Simultaneous Exploration and Coverage by a Mobile Robot	2020	
18	Rekha Chaube	Path Planning Using Coverage Algorithms on Physical Robots	2020	

**UG Projects:** Completed: 40 students (11 projects)

### **Summer Internship (Under NITK SIP)**

1. Mr. Helder Montiero from VNIT, Nagpur (2009)
  2. Mr. Rajat Mittal from MIT, Manipal (2013)
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## **PUBLICATIONS**

### Books:

1. **K.R. Guruprasad, Robotics: Mechanics and Control, PHI, Delhi 110092, 2019**  
(<https://www.phindia.com/Books/BookDetail/9789388028615/robotics-guruprasad>)
2. D. Ghose, P.B. Sujit, and K.R. Guruprasad, Multi-robotic search (Under preparation)
3. K.R. Guruprasad (Ed), Lecture notes on Robotics and Multi-agent Systems, July 2009 (As part of STTP on Robotics and Multi-agent systems, NITK, Surathkal, July 2019 – Distributed to participants. Not formally published.)
4. Santosh K V and K Guruprasad Rao (K R Guruprasad) (Editors), Smart Sensors Measurements and Instrumentation Select Proceedings of CISCON 2020, Lecture Notes in Electrical Engineering 750, Springer Nature Singapore Pte Ltd., 152 Beach Road, #21-01/04 Gateway East, Singapore.  
(<https://link.springer.com/book/10.1007/978-981-16-0336-5>)

### Book Chapters (Peer reviewed)

1. Kalburgi S., Nair V.G., Guruprasad K.R. (2020) Application of Coverage Path Planning Algorithm for Milling Operations. In: Thampi S. et al. (eds) Intelligent Systems, Technologies and Applications. Advances in Intelligent Systems and Computing, vol 1148. Springer, Singapore pp 213-220.
2. Doddabasappa Marebal and K R Guruprasad, 3D printable modules for manually reconfigurable manipulator with desired D-H parameters, C Shreesha and Ravindra D. Gudi Guest Editors, Control and Instrumentation Systems, Proceedings of CISCON 2018, Lecture Notes in Electrical Engineering 581, 2020, pp. 99-112.
3. P. M. Mohammad Minhaz Falaki, Akshar Padman, Vishnu G Nair and K.R Guruprasad, "Simultaneous Robotic Exploration and Coverage", C Shreesha and

- Ravindra D. Gudi Guest Editors, Control and Instrumentation Systems, Proceedings of CISCON 2018, Lecture Notes in Electrical Engineering 581, 2020, pp. 33-41.
4. Vishnu G Nair and K.R Guruprasad, "Manhattan Distance Based Voronoi Partitioning for Efficient Multi-robot Coverage", C Shreesha and Ravindra D. Gudi Guest Editors, Control and Instrumentation Systems, Proceedings of CISCON 2018, Lecture Notes in Electrical Engineering 581, pp. 81-90, 2020
  5. Vishnu G Nair and K.R Guruprasad, "Multi-robot coverage using Voronoi partitioning based on Geodesic distance", C Shreesha and Ravindra D. Gudi Guest Editors, Control and Instrumentation Systems, Proceedings of CISCON 2018, Lecture Notes in Electrical Engineering 581, 2020, 2pp. 59-66
  6. Kurt Hungerford, Prithviraj Dasgupta and K. R. Guruprasad, A Repartitioning Algorithm to Guarantee Complete, Non-overlapping Planar Coverage with Multiple Robots, Springer Tracts in Advanced Robotics, 112, pp. 33-48, 2016.
  7. K.R. Guruprasad, EgressBug: A real time path planning algorithm for a mobile robot in an unknown environment, Advanced Computing, Networking and Security, Lecture Notes in Computer Science, vol. 7135, 2012, pp. 228-236.
  8. K.R. Guruprasad and D. Ghose, Heterogeneous sensor based Voronoi decomposition for spatially distributed limited range locational optimization, Voronoi's Impact on Modern Science, Book 4, vol. 2, Eds., D.-S. Kim, K. Sugihara, September, 2008, pp. 78-87.

#### Journals (Peer reviewed SCI/Scopus Indexed)

1. Vishnu G Nair and K R Guruprasad, "2D-VPC: An efficient coverage algorithm for multiple autonomous vehicles", International Journal of Control, Automation, and Systems, 2021 (<https://doi.org/10.1007/s12555-020-0389-6>) [IF – 2.733, SCI-Expanded, Scopus]
2. Jeane M D'Souza, Venkat Varun Velpula, and K R Guruprasad, "On effectiveness of camera as an UAV mounted search sensor," International Journal of Control, Automation, and Systems, 2021 (<https://doi.org/10.1007/s12555-020-0373-1>) [IF – 2.733, SCI-Expanded, Scopus]
3. Soumya S. and K.R. Guruprasad, "Distributed nonlinear control of planar serial-link manipulators", International Journal of Control, Automation, and Systems, 19(2) (2021) pp. 850-863, <http://dx.doi.org/10.1007/s12555-020-0031-7> [IF – 2.733, SCI-Expanded, Scopus]
4. K.R. Guruprasad and T.D Ranjitha, "CPC algorithm: Exact area coverage by a mobile robot using approximate cellular decomposition", Robotica: (2021)

- volume 39, pp. 1141–1162. (DOI: <https://doi.org/10.1017/S026357472000096X>) [ IF – 1.509, SCI-Expanded, Scopus]
5. Soumya S. and K.R. Guruprasad, “Multi-agent system inspired distributed control of a serial-link robot”, *Journal of Automation, Mobile Robotics, and Intelligent System*, vol 14, no 1, pp. 29-38, 2020. [Scopus]
  6. Vishnu G Nair and K.R Guruprasad, “MR-SimExCoverage: Multi-robot simultaneous exploration and coverage,” *Computers and Electrical Engineering*, vol 95, 2020. [Q1, IF 2.633, SCI-Expanded, Scopus]
  7. Vishnu G Nair and K.R Guruprasad, “Geodesic-VPC: spatial partitioning for multi-robot coverage problem”, *International Journal of Robotics and Automation*, vol 35, issue 3, 2020, pp. 189-198. [SCI-Expanded, Scopus, IF 1.062]
  8. Vishnu G Nair and K.R Guruprasad, “GM-VPC: An algorithm for multi-robot coverage of known spaces using generalized Voronoi partition”, *Robotica*, vol 38, issue 5, May 2020, pp. 845-860. [IF – 1.509, SCI-Expanded, Scopus, citation 3]
  9. Jeane M D’Souza, K.R. Guruprasad, and Akshar Padman, “A realistic simulation platform for multi-quadcopter search using downward facing cameras”, *Computers and Electrical Engineering*, vol 74, pp. 184-195, March, 2019. [Q1, IF 2.633, SCI-Expanded, Scopus, citation 1]
  10. Vishnu G. Nair and K.R. Guruprasad, Centroidal Voronoi partitioning using virtual nodes for multi-robot coverage, *International Journal of Engineering & Technology*, 7 (2.21), 2018, 135-139. (XV Control Instrumentation System Conference, MIT, Manipal, 2018) [Scopus]
  11. Jeane M. D’souza, Siddhartha Rao, and K.R. Guruprasad, Optimal deployment of camera mounted UAVs performing search, *International Journal of Engineering & Technology*, 7 (2.21), 2018, 161-165. (XV Control Instrumentation System Conference, MIT, Manipal, 2018) [Scopus]
  12. S Soumya and K R Guruprasad, “Model-based Manipulator Control and the Computational Cost”, *Journal of Advanced Research in Dynamical and Control Systems*, vol 10, issue 12, pp. 319-326, 2018. [Scopus]
  13. Deepak Mohan and K.R. Guruprasad, Swarm-dular quadcopter: bringing swarm robotics and modular robotics together, *International Journal of Engineering & Technology*, 7 (2.21), 2018, 20-23. (XV Control Instrumentation System Conference, MIT, Manipal, 2018) [Scopus]
  14. P. Dasgupta, J. Baca, K. R. Guruprasad, A. Munoz-Melendez, J. Jumadinova, The COMRADE System for Multi-Robot Autonomous Landmine Detection in Post-

Conflict Regions, *Journal of Robotics*, vol 2015, February 2015.  
<https://doi.org/10.1155/2015/921370> [Scopus, Citation – 9]

15. K.R. Guruprasad, Effectiveness-Based Voronoi Partition: A new tool for solving a class of location optimization problems, *Optimization Letters*, vol 7, Issue 8, December 2013, pp 1733-1743. [Q1, SCI-Expanded, Scopus, IF 1.502, citation 5]
16. K.R. Guruprasad and D. Ghose, Performance of a Class of Multi-Robot Deploy and Search Strategies based on Centroidal Voronoi Configurations, *International Journal of Systems Science*, vol 44, issue 4, 2013, pp. 680-699. [SCI-Expanded, Scopus, IF 2.149, citation 25]
17. K.R. Guruprasad and D. Ghose, Heterogeneous Locational Optimization using Generalized Voronoi Partition, *International Journal of Control*, vol 86, issue 6, 2013, pp. 977-993. (Q1, SCI-Expanded, Scopus, IF – 2.780, citation 34)
18. K.R. Guruprasad and D. Ghose, Automated multi-agent search using centroidal Voronoi configuration, *IEEE Transactions on Automation Science and Engineering*, vol. 8, issue 2, April 2011, pp. 420-423. (Q1, SCI-Expanded, Scopus, IF – 4.938, citation 40)

#### Technical Reports

K.R. Guruprasad, Z. Wilson, and P. Dasgupta, *Complete Coverage of an Initially Unknown Environment by Multiple Robots using Voronoi Partition*, UNO Tech Report (cst-2011-001)

#### Conferences/Workshops (Peer reviewed)

1. Shashank Rao Marpally, Nagarakshith M S, Arjun Sadananda, and K R Guruprasad, Geometrical Mapping of an Initially Unknown Region by a Mobile Robot, 3rd IEEE International Conference on Distributed Computing, VLSI, Electrical Circuits and Robotics (2019 DISCOVER), Manipal Institute of Technology, Manipal, India, 11-12 Aug 2019.
2. K.R Guruprasad, X-STC: An Extended Spanning Tree-based Coverage algorithm for mobile robots, 4th International Conference on Advances in Robotics, IIT Madras, Chennai, 2-6 July 2019.
3. T.D. Ranjitha and K.R. Guruprasad, Pseudo Spanning Tree-based Complete and Competitive Robot Coverage using Virtual Nodes, IFAC-PapersOnLine, vol 49, issue 1, 4th IFAC Conference on Advances in Control and Optimization of Dynamical Systems ACODS 2016 - Tiruchirappalli, India, 1-5 February 2016, pp 195-200.

4. S. Soumya and K.R. Guruprasad, Model-based Distributed Cooperative Control of a Robotic Manipulator, IEEE International Women in Engineering (WIE) Conference on Electrical and Computer Engineering 2015 (WIECON-ECE 2015), 19-20 December 2015, Dhaka, Bangladesh.
5. H.M. Vyas, S.M. Suma, S.G. Koolagudi, K.R. Guruprasad, Identifying Gamakas in Carnatic Music, In Proc of Eighth International Conference on Contemporary Computing (IC3), Noida, India, 2015, pp. 106-110.
6. K.R. Guruprasad and T.D. Ranjitha, ST-CTC: A truly Complete Competitive spanning tree coverage algorithm for mobile robots, Advances in Robotics, 2nd International Conference of Robotics Society of India, BITS Goa, India, July 2015.
7. K. Hungerford, P. Dasgupta, and K.R. Guruprasad, A Repartitioning Algorithm to Guarantee Complete, Non-overlapping Planar Coverage with Multiple Robots (**best paper award finalist**), Distributed Autonomous Robots and Systems (DARS) 2014.
8. K. Hungerford, P. Dasgupta, and K.R. Guruprasad, Distributed, Complete, Multi-robot Coverage of Initially Unknown Environments using Repartitioning, Proc. of the 13th International Conference on Autonomous Agents and Multiagent Systems, 2014.
9. K.R. Guruprasad and P. Dasgupta, A Distributed Algorithm for Computation of Exact Voronoi Cell in a Multi-Robotic System, Proc of Third International Conference on Emerging Applications of Information Technology, November 30 – December 01, 2012, Kolkata, India, pp. 13-18.
10. K.R. Guruprasad and P. Dasgupta, Distributed Voronoi partitioning for multi-robot systems with limited range sensors, Proc of IEEE/RSJ International Conference on Robotics and Intelligent Systems, October 7-12, 2012, Vilamoura, Algarve, Portugal, pp. 3546 – 3552.
11. K.R. Guruprasad and P. Dasgupta, Egress: An online path planning algorithm for boundary exploration, Proc of 2012 IEEE International Conference on Robotics and Automation, May 14-18, 2012, St. Paul - Minnesota, USA, pp. 3991 – 3996.
12. K.R. Guruprasad and P. Dasgupta, Distributed spatial partitioning of an initially unknown region for a multi-robot coverage application, Autonomous Robots and Multirobot Systems (ARMS) workshop (co-located with AAMAS 2012) Valencia, Spain, 2012.
13. P. Dasgupta, A. Munoz-Melendez, and K.R. Guruprasad, Multi-robot terrain coverage and task allocation for autonomous detection of landmines, SPIE Defense, Security, and Sensing, Baltimore, MD, USA, April 23-27, 2012.



14. K.R. Guruprasad, Z. Wilson, and P. Dasgupta, Complete Coverage of an Initially Unknown Environment by Multiple Robots using Voronoi Partition, 2nd International Conference on Advances in Control and Optimization in Dynamical Systems, February 16-18, 2012, Bengaluru, India.
15. K.R. Guruprasad, Generalized Voronoi partition: A new tool for optimal placement of base stations, 5th IEEE International Conference on Advanced Networking and telecommunication Systems, December 18-21, 2011, Bengaluru (Bangalore), India.
16. K.R. Guruprasad, EgressBug: A real time path planning algorithm for a mobile robot in an unknown environment, Proc of International Conference on Advanced Computing, Networking and Security, December 16-18, 2011, Surathkal, India.
17. Rastogi, K.R. Guruprasad, Kinematic analysis of 5dof manipulator arm for mine detection, Proc of the International Conference on Trends in Industrial Measurements and Automation (TIMA-2011), January 6-8, 2011, Chennai, INDIA.
18. K.R. Guruprasad and D. Ghose, Multi-agent search strategy based on Centroidal Voronoi configuration, Proc of 2010 IEEE International Conference on Robotics and Automation, May 3-8, 2010, Anchorage, Alaska, USA.
19. K.R. Guruprasad, D. Ghose, Generalization of Voronoi Partition: A Sensor Network Perspective, Proc of IISc Centenary International Conference and Exhibition on Aerospace Engineering (ICEAE), Bengaluru, May 18-22, 2009, pp 18-22.
20. K.R. Guruprasad and D. Ghose, Heterogeneous sensor based Voronoi decomposition for spatially distributed limited range locational optimization, in Voronoi's Impact on Modern Science, Book 4, vol. 2, Proceedings of 5th Annual International Symposium on Voronoi Diagrams (ISVD 2008), Ukraine, September 2008, pp. 78-87.
21. K.R. Guruprasad, Multi-agent search using sensors with heterogeneous capabilities, Extended Thesis Abstract for Doctoral Mentoring Program, in Proceedings of the 7th international joint conference on Autonomous Agents and Multiagent Systems (AAMAS 2008), Estoril, Portugal, May, 2008, pp. 1734-1735.
22. K.R. Guruprasad and D. Ghose, Multi-Agent Search using Sensors with Heterogeneous Capabilities, Proc of the 7th International Conference on Autonomous Agents and Multiagent, Estoril, Portugal, May 2008, pp. 1397-1400.

23. K.R. Guruprasad and D. Ghose, Deploy and Search Strategy for Multi-agent systems using Voronoi partitions, Proceedings of 4th international Symposium on Voronoi Diagrams in Science and Engineering (ISVD 2007), University of Glamorgan, Wales, UK, July 9-11, 2007, pp 91-100.
  24. K.R. Guruprasad and D. Ghose, Multi-agent Search using Voronoi Partitions, Proceedings of International Conference on Advances in Control and Optimization of Dynamical Systems (ACODS2007), Bangalore, INDIA, February 1-2, 2007, pp 380-383.
  25. K.R. Guruprasad and A. Ghosal, Model reference learning control for rigid robots, Proceedings of ASME DETC'99, Las Vegas, USA, Sept. 1999.
  26. K.R. Guruprasad and A. Ghosal, Model reference learning control for rigid robots using ANFIS, National Seminar on Aerospace Related Mechanisms, Hyderabad, India, 1999.
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### Awards, Patents, Prizes etc. listing

**Fellowship** from the Indian National Academy of Engineering (INAE) (June-July 2010) Under scheme of “mentoring of Engineering Teachers by INAE Fellows”. Mentor: Professor Debasish Ghose, Department of Aerospace Engineering, Indian Institute of Science, Bengaluru, India.

**Patent:** “Tilt Rotowing mechanism for UAV type VTOL”, K.R. Guruprasad, Sandeep Kumar Nayak, and Narayan Sanjeev Chavan (*Pending*: Application No. 201641020393 date filed: June 15, 2016)

**Best paper award finalist** - K. Hungerford, P. Dasgupta, and K.R. Guruprasad, A Repartitioning Algorithm to Guarantee Complete, Non-overlapping Planar Coverage with Multiple Robots, Distributed Autonomous Robots and Systems (DARS) 2014.

**Best paper:** K.R Guruprasad, Multi-Agent Search using Sensors with Heterogeneous Capabilities, Presented in the Doctoral Symposium, IISc-IBM Research Third Operations Research and Data Analytics Workshop, March 2008. (Received best presentation award)

**Student Bursary** for 4th international Symposium on Voronoi Diagrams in Science and Engineering (ISVD 2007)

**Student Bursary** for 7th international joint conference on Autonomous Agents and Multiagent Systems (AAMAS 2008)

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## Sponsored/R&D/Consultancy projects:

**CARS project on “Comparative analysis of different Control strategies to finalize the effective control law for Augmentative Exoskeleton”, Sponsoring Agency – DEBEL (DRDO), Bengaluru. Duration: 18 months, Role: Principal Investigator (Sole), Budget: ₹24.3824 Lakh.**

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## Continuing education programs/conferences organized

- Conducted a one-week AICTE/MHRD STTP on “Robotics and Multi-agent systems” during 27-31, July 2009, at NITK, Surathkal, for the benefit of teachers from Engineering Colleges.
- **Invited Editor** for publication of proceedings of the XVII Control Instrumentation System Conference (CISCON 2020) in **springer nature as one of its lecture notes**

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## INVITED TALKS

- Distributed multi-robot terrain coverage using Voronoi partition, April 27, 2012, PKI Round Table, University of Nebraska, Omaha, NE, USA.
- Distributed multi-robot terrain coverage using Voronoi partition, May 4, 2012, Electrical and Computer Engineering Systems Seminar, University of Michigan, Ann Arbor, MI, USA.
- Linear Algebra in Mechanical Engineering, July 31, 2013, Workshop on Engineering Applications of Linear Algebra, Organized jointly by Dept. of ECE and Dept. of S&H, P E S Institute of Technology, Bengaluru, India.

- Introduction to multi-agent/robotic systems, August 12, 2013, Workshop on Robotics and Low-cost Automation Department of Industrial Engineering and Management, RVCE, Bengaluru, India.
  - Cooperative control: Multi-robotic Systems, Keynote speech, December 20, 2013, Control Instrumentation Conference, MIT, Manipal, India
  - Introduction to multi-agent/robotic systems, February 11, 2014, Alva's Institute of Technology, Moodbidri, India.
  - Introduction to multi-agent/robotic systems, February 20, 2014, SIT, Mangalore, India.
  - Delivered guest lecture on 'Physics of flute' as part of "Science of musical instruments" at the Department of Engineering Design, IIT Madras, Chennai – during October 2016.
  - Delivered a lecture on "Voronoi partition and its generalization for multi-robot systems", June 3, 2019, Voronoi Diagram Research Center, Hanyang University, Seoul, Korea.
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## PROFESSIONAL SERVICES

### PC member:

- National Systems Conference 2010, NITK, Surathkal
- International Conference on Advanced Computing, Networking and Security (ADCONS 2011), Surathkal, India.
- Third Conference on Theoretical and Applied Computer Science (TACS 2012), Stillwater, OK, USA.
- AIR 2017, 3<sup>rd</sup> International Conference of Robotics Society of India, June 28-July 2, 2017, IIT Delhi.

### Peer review:

- International Journal of Systems Science
- Automatica
- Robotica
- Computers & Electrical Engineering
- IEEE Sensors
- IEEE Transactions on Automatic Control
- Saadhana

- IEEE Transactions on Robotics
- IEEE Transactions on Systems, Man, and Cybernetics
- International Symposium on Voronoi Diagrams in Science and Engineering (ISVD 2008)
- IEEE International Conference on Robotics and Automation (ICRA 2010)  
**IEEE/WIC/ACM International Conference on Intelligent Agent Technology (2011)**
- IEEE American Control Conference (ACC 2010, 2011, 2012)
- IEEE Conference on Decision and Control (CDC 2011, CDC 2012)
- International Conference on Swarm Intelligence (ICSI 2012)
- IEEE International Conference on Intelligent Robots and Systems
- IEEE Transactions on Aerospace And Electronic Systems

#### **Membership of Professional bodies:**

- **Senior Member, IEEE**
- Member, ACM
- Life Member, ISTE.
- Member, The Robotics Society

#### **Important service roles (institution building and student-centric roles)**

- Member, Dept Undergraduate Committee (DUGC) **(NITK)**
  - Member, Dept Postgraduate Committee (DPGC) **(NITK)**
  - Member, Dept Research Program Committee (DRPC) **(NITK)**
  - Faculty Advisor – II-year MTech (Mechatronics) **(NITK)**
  - Comprehensive Examination Committee – Coordinator, Mechatronics **(NITK)**
  - Member, Curriculum revision committee for MTech (MC) **(NITK)**
  - Member, Departmental Examination Time Table committee. **(NITK)**
  - **Invited Expert Member, Board of Studies, School of Robotics, Defence Institute of Advanced Technology, Pune**
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