RESUME

Dr. Gangireddy Sushnigdha

Assistant Professor

Department of Electrical Engineering

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Areas of interest

Control systems, Application of Optimal control theory, Developing novel Meta-heuristic algorithms for solving optimization problems, Developing path planning algorithms for space vehicles.

Educational qualifications

Qualification	Discipline/Area	Year	Board/Institution
Ph.D.	Pigeon Inspired Optimization based Trajectory Design Strategies for Re-entry Vehicles	2018	Indian Institute of Technology Bombay, Mumbai, India
M.E.	Electrical Engineering (Control Systems)	2012	National Institute of Technology Kurukshetra, Kurukshetra, India
B. Tech.	Electrical and Electronics Engineering	2010	JNT University, Kakinada
Intermediate	Maths, Physics & Chemistry	2006	Board of Intermediate Education, A.P
SSC	Not Applicable	2004	Board of Secondary Education, A.P

Professional Details

Sl. No	Institute/Industry	Position	Duration	
			From	To
1.	NIT Kurukshetra, Kurukshetra	Assistant Professor on contract	November 2012	June 2013
2.	REVA Institute of Technology and Management, Bangalore	Assistant Professor	August 2013	July 2014
3.	SVNIT Surat	Assistant Professor	5th November 2019	Till date

Research Projects

Ongoing SEED grant project titled “Trajectory Optimization of Reentry Vehicles using combined Metaheuristic and Collocation based methods”.

Research publications

International Journals:

1. **Gangireddy Sushnigdha** and Ashok Joshi, Evolutionary method based integrated guidance strategy for reentry vehicles, *Engineering Applications of Artificial Intelligence* (Elsevier), vol. 69, pp. 168 - 177, 2018.
2. **Gangireddy Sushnigdha** and Ashok Joshi, Re-entry Trajectory Design with Pigeon Inspired Optimization using derived Angle of Attack profile, *Journal of Aerospace Engineering*, vol. 31, no. 6, pp. 04018104, 2018.
3. **Gangireddy Sushnigdha** and Ashok Joshi, Re-entry Trajectory Optimization using Pigeon Inspired Optimization Based Control Profiles, *Advances in Space Research*, vol. 62, no. 11, pp. 3170-3186, 2018.
4. Aeidapu Mahesh and **Gangireddy Sushnigdha,** A Novel Search Space Reduction Optimization Algorithm, *Soft Computing,* pp. 1-28, 2021. (doi: 10.1007/s00500-021-05838-7)

International Conferences:

1. **Gangireddy Sushnigdha** and Ashok Joshi, "Evolutionary Method Based Hybrid Entry Guidance Strategy for Reentry Vehicles", IFAC-PapersOnLine, vol. 49, Iss. 5, pp. 339-344, ICONS 2016, Reims, France, 2016.
2. **Gangireddy Sushnigdha** and Ashok Joshi, "Re-entry Trajectory Design using Pigeon Inspired Optimization", Paper No. 2017-4209, AIAA Atmospheric Flight Mechanics Conference, Denver, Colorado, AIAA AVIATION Forum, 2017.
3. **Gangireddy Sushnigdha** and Ashok Joshi. "Trajectory Design of Re-entry Vehicles using combined Pigeon Inspired Optimization and Orthogonal Collocation method", IFAC-PapersOnLine, vol. 51, Iss. 1, pp. 656-662, ACODS 2018, Hyderabad, India, 2018.
4. **G. Sushnigdha** and A. Mahesh, "On Convergence of Pigeon Inspired Optimization Algorithm," *2019 Sixth Indian Control Conference (ICC),* Hyderabad, India, 2019, pp. 152-157, doi: 10.1109/ICC47138.2019.9123217.
5. **Gangireddy Sushnigdha, "**Trajectory Optimization of Space Maneuver Vehicle using Grey Wolf Optimizer", presented at International Conference on Soft Computing for Problem Solving, IIT Indore 2020.
6. **Gangireddy Sushnigdha, "**Grey Wolf Optimizer based Orthogonal Collocation Approach for Trajectory Optimization of Space Shuttle", presented at International Conference on Soft Computing for Problem Solving, IIT Indore 2020.
7. Aeidapu Mahesh and **Gangireddy Sushnigdha,** "Grey Wolf Optimizer based Selective Harmonic Elimination for a Cascade H-bridge Multilevel Inverter", presented at International Conference on Soft Computing for Problem Solving, IIT Indore 2020.

Short term courses organized

1. Coordinator for TEQIP-III sponsored one week short term course on Control of Power Electronics Converters for On grid and Off grid Applications organized at SVNIT Surat, during 03 – 07 August, 2020.
2. 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.
3. 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.

Short term course/Conference/workshops attended

1. Attended a tutorial workshop on “Nonlinear, Adaptive, Optimal and Embedded Control”, conducted at IISC Bangalore, during 18 – 23 July, 2016.
2. Attended a short term course on “Automatic Control Sytems Engineering and Design” organized by Department of Avionics, IIST, Thiruvananthapuram, during 27 – 30 December, 2016.
3. Attended a course on “Pedagogy & Research Methodology (PRM-2019), organized at SVNIT from 18-22 November 2019.
4. Attended a Faculty Development Program on “Teaching and Learning of Advanced Control Systems”, organized by Department of Electrical Engineering, NIT Warangal, 10-16 August 2020.
5. Attended a Faculty Development Program on “Recent Advances in Intelligent Systems and Nonlinear Control”, organized by Department of Electrical Engineering, NIT Calicut, 12-16 October 2020.
6. Attended a Short-Term Training Program on “Recent Trends and Advances in the Navigation and Control of Unmanned Aerial Vehicles”, organized by Department of Electrical Engineering, College of Engineering Trivandrum, 22-27 March 2021.

Achievements and other activities

- Received Gold Medal for being the best graduating student in M. Tech (Control Systems) from NIT Kurukshetra.
- Teaching assistant for various courses in IIT Bombay during the period 2014-2018.
- Google scholar link: Gangireddy Sushnigdha - Google Scholar

Membership in Professional bodies

- IEEE Aerospace and Electronic Systems Society
- IEEE Control Systems Society
- IEEE Robotics and Automation Society
- IEEE Women in Engineering