

Profile Page



Name : Dr Kuldeep Singh Nagla
Designation : Associate Professor
Department : Instrumentation & Control Engg.
Qualification : PhD (Dr BR Ambedkar NIT Jalandhar)
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Research Interests :

Robotics, Artificial Intelligence (Sensor fusion in mobile robots), Sensors, SLAM, Mobile Robot Mapping, Industrial Automation, IPR etc.

Dr. Kuldeep Singh Nagla is the former Head of the Department, department of Instrumentation and Control Engineering & Electrical Engineering and presently working as an Associate Professor at Dr BR Ambedkar National Institute of Technology Jalandhar-India (an Institute of National Importance). He has completed his masters and PhD at NIT Jalandhar with specialization on Artificial Intelligence in Robotics and have twenty-two years of teaching and research experience. More than twenty Intellectual Property Rights (IPR's) in the form of Patents, Copyrights and Industrial Designs are in his credit and many more are in pipeline. He is an inventor of an Earthquake Alarm, Leg exerciser machine and an Intelligent Induction Hardening Machine etc. He has published more than 45 research papers in Journals and conferences of good repute. He is a member of various technical societies and renowned organizations at International and National level. He has successfully completed many R&D projects and presently working on shared autonomy in mobile robots in collaboration with Korea University. He is also the invited member of the technical committee of Indian Space Research Organization (ISRO) for space robotics mission, 'Gaganyaan'.

Other Profile Links :

Google Scholar Link :

Dr. KS Nagla [Click Here](#)

Personal Web Link :

KS Nagla [Click Here](#)

Journal Publications :

Year	Journal	Publication
2020	International Journal of Image and Data Fusion	Archana Khurana, KS Nagla , Improved Auto-Extrinsic Calibration between Stereo Vision Camera and Laser Range Finder,
2019	Journal of Intelligent & Robotic Systems	Archana Khurana, KS Nagla "An Improved Method for Extrinsic Calibration of Tilting 2D LRF",
2019	Sensor Review Vol. 39 No. 4, pp. 456-472	Singh R, Nagla K.S., "A modified sensor fusion framework for quantifying and removing the effect of harsh environmental conditions for reliable mobile robot mapping",
2018	Official Journal of the Patent office (India)	KS Nagla, Water Mellon seed extracting device and method thereof, Vol 04/2018 PP 3196
2018	Official Journal of the Patent office (India)	KS Nagla, Cookies dispensing machine, , Vol 04/2018 PP 3197
2018	Official Journal of the Patent office (India)	KS Nagla, Robotic modular transportation system
2018	Official Journal of the Patent office (India)	KS Nagla, Robotic modular transportation system, Vol 04/2018 PP 3198
2018	International Journal of Intelligent Unmanned Systems (SCOPUS)	Singh R, Nagla K.S., "Multi-data sensor fusion framework to detect transparent object for the efficient mobile robot mapping" International Journal of Intelligent Unmanned Systems, Accepted 2018
2018	World Journal of Engineering (SCOPUS)	Singh, R. and Nagla, K.S., "Error Analysis of Laser Scanner for Robust Autonomous Navigation of Mobile Robot in Diverse Illumination Environment", World Journal of Engineering Accepted 2018
2018	MAPAN Springer (SCI)	Singh, R. and Nagla, K.S., 2018, "Removal of Specular Reflection and Cross Talk in Sonar for Precise and Accurate Range Measurements", MAPAN, Springer, 2018
2018	International Journal of Intelligent Unmanned Systems (SCOPUS)	Singh, R. and Nagla, K.S., "Improved 2D laser grid mapping by solving mirror reflection uncertainty in SLAM", International Journal of Intelligent Unmanned Systems, 6(2) 2017, pp.93-114
2018	MAPAN Springer (SCI)	Singh, R. and Nagla, K.S., "Sonar sensor model for the precision measurement to generate robust occupancy grid" MAPAN, Springer, Accepted, 2018
2017	MAPAN Springer (SCI)	Khurana, A. & Nagla, K.S. "Signal Averaging for Noise Reduction in Mobile Robot 3D Measurement System"
2015	International Journal of Robotics and Automation (Google Scholar)	Nagla, K.S., Uddin, M. and Singh, D., 2015. Dedicated Filter for Robust Occupancy Grid Mapping. IAES International Journal of Robotics and Automation, 4(1), p.82.
2014	International Journal of Robotics and Automation (Google Scholar)	Multisensor Data Fusion and Integration for Mobile Robots: A Review
2014	International Journal of Advanced Engineering Sciences and Technologies	Occupancy Grid Mapping for Mobile Robot Using Scale Invariant Feature Transform
2012	Robotics and Autonomous Systems (SCI)	Improved occupancy grid mapping in specular environment
2012	International Journal of Advanced Research in Computer Science and Software Engineering (Google Scholar)	Proposed model of an earthquake detector by using UBG-04LX-F01 laser rangefinder
2010	International Journal Trends in Carbohydrate Research (Google Scholar)	Synthesis and characterization of Gum ghatti-based electro- sensitive smart network
2008	Journal of Tissue Viability (SSCI)	Pressure mapping and performance of the compression bandage/garment for venous leg ulcer treatment

2007	Official Journal of the Patent office (India)	Mechanism to clean the bird droppings in cage type poultry farm
	Official Journal of the Patent office (India)	Intelligent Induction Hardening Device And Method Thereof

Conference Publications :

Year	Conference	Publication
2018	SOCTA, 2018 (Scopus)	Archana Khurana , KS Nagla, Rini Sharma " 3-D scene reconstruction of vision information for mobile robot applicatiobn
2016	Internatioal Conference on Humanizing work and work environment HWWE-2016	Archana Khurana, KS Nagla, Rini Sharma" 3D mobile robot mapping using laser range finder" in Internatioal Conference on Humanizing work and work environment HWWE-2016, India
2015	12th IEEE International conference INDICON 2015	Corner Extraction From Indoor Environment For Mobile Robot Mapping
2014	IEEE International Conference on Advances in Computing, Communications and Informatics	A new approach of path planning for mobile robots
2014	IEEE International Conference on Issues and Challenges in Intelligent Computing Techniques (ICICT)	Occupancy grid mapping for mobile robot using sensor fusion
2013	annual IEEE workshops (Sensing for Control and Augmentation)	sensor fusion frame work for robust occupancy grid mapping
2012	2nd International Conference on Biomedical and Assistive Technologies	Online performance measure of logical sensors for occupancy grid mapping
2011	Intelligent Manufacturing & Automation: Power of Knowledge and Creativity”	Sensor Fusion Frame Work for Marble/Stone Processing Industry using Low Cost Sensors
2010	AIPR 2010	Object Identification in Dynamic Environment Using Sensor Fusion
2006	International conference ACIAR-2005 (Asian conference on Industrial Automation & Robotics)	Robot for Cleaning the Surface below the Indian Railway Tracks at Platforms: Feasibility and Kinematics
2006	IEEE International Conference on Mechatronics and Automation	Service Robot for Indian Railway Tracks at Platforms: Feasibility, Kinematics, Dynamics and Trajectory planning
2001	Annals of DAAAM in Proceedings of 12th DAAAM International Symposium	Robot for Railways (with case study of Indian railways)
2001	BITECH Bangkok THAILAND	PLC based remote control universal robot” Proceedings of Asian Symposium on Industrial Automation and Robotics (ASIAR 2001)
2000	Proceeding of National Symposium IPRooM, 2000, Pryadarshani College of Engineering and Technology	Domestic Robot
	Intelligent Manufacturing & Automation: Learning from Nature	Domestic Mobile Robot
	Conference on Industrial Automation & Robotics	Sequence Control of Mobile Robot for Collision Free Path
	International Conference on Emerging Technology	Recent Progress in Underwater vision systems
	Intelligent Manufacturing and Automation: Focus on Young Researchers and Scientists	Kinematics of Wheeled Mobile Robot” proceedings of 16th DAAAM International Symposium
	Intelligent Manufacturing & Automation: Focus on Mechatronics & Robotics	Cleaning Robot: Selection and analysis of driving Mechanism
	World Conference on Education	Recent Trends in Cleaning Service Robots

	International conference on Advances in Control and Optimization of Dynamical Systems	Evaluation of Occupancy Grid using LabVIEW software
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Research Projects :

Role	Project Type	Title	Funding Agency	From	To	Amount	Status	Co-Investigator
Principal Investigator	R&D	Design and Development of Underwater Robot	Dr. BR Ambedkar National Institute of Technology Jalandhar	2004	2005		complete	
Principal Investigator	R&D	Robot for Cleaning the Railway Tracks (Project No. 26-11/2001.TSV, S.No-89)	MHRD (Ministry of Human Resource Development), Government of INDIA			Rs 13 Lakh	Complete	
Co-Investigator	R&D	Designing Non-Woven Fabric for Pulse-Jet Filtration	MHRD (Ministry of Human Resource Development), Government of INDIA				Complete	
Principal Investigator	Indo Korean (R&D)	Real time shared autonomy system for the field mobile robot	DST and Govt. of South Korea	2015		36 Lakh Indian side	in process	
research assistant	• Indo-US project	Charge carrying transport in crystalline materials	DST	Feb.,96	Sept,96		complete	

Events Organized :

Category	Type	Title	Venue	From	To	Designation
AICTE-STC	National	Modern Practices in Measurement and Instrumentation Engineering	Dr BR Ambedkar NIT Jalandhar	13-07-2009	17-07-2009	Coordinator
Workshop	National	Robotics	Dr BR Ambedkar national Institute of Technology Jalandhar	21-08-2016	22-08-2016	faculty coordinator

One day workshop	National	Workshop on Drone	Industrial Block NITJ	25-02-2018	25-02-2018	Coordinator
Workshop	National	One day workshop on robotics under R-tist Robotics club	Seminar Hall Industrial Block	25-02-2018	25-02-2018	Faculty Coordinator

Professional Affiliations :

Designation	Organization
Member	IEEE
Life member	Instrument Society of India (ISOI)
Member	RAS (Robotics and Automation Society)
Life member	India Innovator Association

PhD Supervised :

Scholar Name	Research Topic	Status	Year	Co-Supervisor
Chimata Venkanna	Path planning analysis by varying growth factor with RRT and RRT* techniques	M Tech Completed	2018	
Kandregula Prasanth Kumar	Localization of origami wheeled mobile robot with Augmented Kalman Filter	M Tech Completed	2018	
Deepak Bhola	Mobile robot mapping by stereo vision using feature based techniques	M Tech Completed	2017	
Kirti Singh	Modelling laser intensities corresponding to extrinsic parameter of target	M Tech Completed	2017	
Rajnish Partap Singh	Mobile robot localization by using Kalman Filter	M Tech Completed	2017	
Rini Sharma	Mobile Robot 3D Mapping using Stereovision	M Tech Completed	2016	
Archana Khurana	3D Mobile Robot Mapping using Laser Range Finder	M Tech Completed	2016	
Rahul Sharma	PID Tuning of 3-DOF Manipulator	M Tech Completed	2016	
Nidhi Jain	Corner Extraction from indoor environment for Mobile Robot Mapping	M Tech Completed	2015	
Prem Kumar	Mobile Robot Environment Mapping using Sonar Sensor	M Tech Completed	2015	
Tarlok Singh	Collision Avoidance in Mobile Robots using vector histogram	M Tech Completed	2015	
Vikas Kumar	Error Analysis of 3-DOF manipulator	M Tech Completed	2014	
Jai Parkash Jingar	Improved Computation time for occupancy grid mapping	M Tech Completed	2014	
Sanjay Kumar	Odometry error model for differential drive motor	M Tech Completed	2014	
Jitin Kumar Goyal	Mobile Robot Path Planning	M Tech Completed	2013	
Ravinder Singh	Estimation and removal of errors in Hokuyo UBG-04LX-F01 2D laser range finder	M Tech Completed	2012	
Nikhil Rathi	Object identification using sensor fusion by Dempster Shafer theory	M Tech Completed	2011	
Utpal Kant	Occupancy grid mapping for the mobile robot using Scale Invariant Feature Transform	M Tech Completed	2011	

Rajeev Kumar	Neural learning for sensor fusion in autonomous mobile robot	M Tech Completed	2010	
Priyanshu Tripathi	Occupancy grid mapping for mobile robot using sensor fusion	M Tech Completed	2010	
Rajesh Mahle	A stochastic approach to analyze mobile robot navigation using sensor fusion	M Tech Completed	2009	
Ajaj Rasul	Neuro –fuzzy technique for the speed and steering control and obstacle avoidance for the autonomous guided vehicle	M Tech completed	2008	

Patents :

Name	Reg./Ref. No.	Date of Award/Filing	Organization	Status
Mechanism to Clean Bird Dropping (Garbage) within a Cage type Poultry Farm	210090			Granted
An Earth Quake Alarm	220748,			Granted
An Intelligent Leg Exercise Machine	Patent no 280792		DR BR Ambedkar NIT Jalandhar	Granted
A Method and Mechanism to Control the Position and Orientation of Cleaning Nozzle of Robot	2489/DEL/2009			in process
Induction Hardening Machine	2269/del/2012			Granted
6. Patent entitled “An Improved Packed Bed Photocatalytic Reactor With High And Uniform Illumination And An Associated Technique Of Purification	4290/DEL/2016			in process
Robotic modular transportation system	201611024583			in process
Cookies dispensing machine	201611024585			in process
Watermelon seed extracting device and method thereof	201611024584			in provess
Decorative Article	Indian Design No 207315	2006		Granted
Heat treatment tray	Indian Design No 254948	3/7/2013		Granted
Door Handle	Indian Design no 265973	20-02-2015		Granted
Packed Bed Photocatalytic Reactor	design			in process
Cookies dispensing machine	Design Application No 285331			in process
Watermelon seed extracting device	Design Application No 285332			in process
An Intelligent Leg Exercise Machine,	Patent no 280792		DR BR Ambedkar NIT Jalandhar	Granted

Admin. Responsibilities :

Position Held	Organization	From	To
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Incharge Robotics lab	NITJ	2004	till now
Warden Hostel	NITJ	2006	2009
Assistant proctor	NITJ	2006	2008
Faculty advisor Fine Arts	NITJ	2008	2010
Deputy Registrar Academic	NITJ	2013	2014
Deputy Registrar Establishment	NITJ	2014	2015
University Officer All India Survey on Higher Education	NITJ	2012	2015
Member Rashtriya Avishkar Abhiyan	NITJ	2015	till now
Faculty advisor IPR cell	NITJ	2016	2018
Coordinator SC/ST/OBC/Person with Disability (PwD) and Liaison Officer	NIJ	2008	2017
Faculty advisor IPR cell	NITJ	2016	2018
Head Department of ICE	Dr BR Ambedkar NIT Jalandhar	12-02-2018	till now
Head Department of Electrical Engineering	Dr BR Ambedkar NIT Jalandhar	12-02-2018	till now
Warden H No 5	Dr BR Ambedkar NIT Jalandhar	13-05-2017	28-02-2018
Coordinator Campus Amenities	Dr BR Ambedkar NIT Jalandhar	2017	2018
Chairman BOS Instrumentation and Control Engineering	Dr BR Ambedkar national Institute of Technology Jalandhar	2018-2019	

Award and Honours :

Title	Activity	Given by	Year
First Prize	STC	Coordinator STC IIT delhi	2015
Certificate award	Excellence in Research	DAAAM International Vienna	2011
Third Prize	State level Exhibition of Robotics	Governer Punjab	2011
Best Teacher award	Teaching	Principal GP Bathinda	2002
Best Teacher Award	Teaching	Principal GP Bathinda	2001
Cash Award Rs. 20000	Innovative design of Domestic robot	Commissioner Bathinda	2001