

Profile Page



Name : Dr. Karan Jain
Designation : Assistant Professor
Department : Instrumentation & Control Engg.
Qualification : Ph.D. Broad research area: Biomedical Engineering (Indian Institute of Technology Kharagpur)
M.Tech Instrumentation (Indian Institute of Technology Kharagpur)
B.Tech Instrumentation and Control Engineering (Dr B R Ambedkar National Institute of Technology Jalandhar)
Address : Office # 504 A, Department of Instrumentation and Control Engineering,
Dr B R Ambedkar National Institute of Technology Jalandhar
Jalandhar City, Punjab - 144027
Email : jaink@nitj.ac.in
Phone : +916280206675

Research Interests :

Modeling of physiological systems and associated diseased conditions; cardiovascular system dynamics; applications of machine learning in clinical predictions; brain-computer interface.

Other Profile Links :

Google Scholar Link :

Dr. Karan Jain [Click Here](#)

Journal Publications :

Year	Journal	Publication
2022	Biomedical Signal Processing and Control, Vol. 77, pp. 103781	Ashutosh Dash, Karan Jain, Nirmalya Ghosh, and Amit Patra, "Non-invasive detection of coronary artery disease from photoplethysmograph using lumped parameter modelling."
2021	Biomedical Signal Processing and Control, vol. 68	Karan Jain, Suchi Jain, Arijit Guha, and Amit Patra, "An approach to early stage detection of atherosclerosis using arterial blood pressure measurements."
2019	International Journal of Prognostics and Health Management, vol. 10 (Special Issue PHM for Human Health and Performance) 002, pages: 9.	Karan Jain, Arijit Guha, and Amit Patra. "A particle filter based framework for the prognosis of atherosclerosis via lumped cardiovascular modeling."

2018	Mathematical Biosciences, vol. 304, pp. 79-88.	Karan Jain, Srinivasu Maka, and Amit Patra. "Modeling of cardiovascular circulation for the early detection of coronary arterial blockage."
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Conference Publications :

Year	Conference	Publication
2019	41st Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC), Berlin, Germany.	Ashutosh Dash, Karan Jain, Nirmalya Ghosh, Amit Patra, Anirban D. Choudhury. "Blood Pressure Estimation Based on Pulse Arrival Time and Heart Rate: A Correlation Analysis for Critically Ill Patients."
2018	18th IFAC Symposium on System Identification (SYSID), Stockholm, Sweden.	Karan Jain, Amit Patra, and Srinivasu Maka. "Modeling of the human cardiovascular system for detection of atherosclerosis."
2016	Systems in Medicine and Biology (ICSMB), 2016 International Conference on. IEEE. Kharagpur, India.	Karan Jain, and Srinivasu Maka. "Sensitivity analysis and parameter estimation of cardiovascular model."
2016	Systems in Medicine and Biology (ICSMB), 2016 International Conference on. IEEE. Kharagpur, India.	Tanmay Pal, Karan Jain, and Srinivasu Maka. "Delay dependent analysis of respiratory system- Application to obstructive sleep apnea."
2014	Students' Technology Symposium (TechSym), 2014 IEEE. Kharagpur, India.	Karan Jain, Tanmay Pal, and Srinivasu Maka. "Stability issues in a cardiovascular circulation."
2014	Students' Technology Symposium (TechSym), 2014 IEEE. Kharagpur, India.	Tanmay Pal, Karan Jain, and Srinivasu Maka. "Stability analysis of Human Respiratory System."

Events Organized :

Category	Type	Title	Venue	From	To	Designation
STC	National	Modeling and Identification of Physiological Systems (MIPS-2020)	Online Mode	27-07-20	31-07-20	Convener
STC	National	Cryogenics & Composites: Theory & Applications (CCTA-2020)	Online Mode	03-08-20	07-08-20	Coordinator
STC	National	Recent Advances in Sensor Design and Interface Circuits (RASIC-2020)	Online Mode	15-10-20	19-10-20	Coordinator
STC	National	Modeling and Identification of Physiological Systems (MIPS-2021)	Online Mode	20-10-21	24-10-21	Coordinator
STC	National	Optimization and Control Design Techniques Innovations and Challenges (OCDT-2022)	Online Mode	23-05-22	27-05-22	Coordinator

Professional Affiliations :

Designation	Organization
Member	IEEE

PhD Supervised :

Scholar Name	Research Topic	Status	Year	Co-Supervisor
Pankaj Kumar Sahu	Development of Affordable Artificial Intelligence based Brain Machine Interface for Real Time R.P.M. Control of BLDC Motor for Industrial Applications	Comprehensive seminar (Done)	2019	

PG Dissertation Guided :

Student Name	Dissertation Title	Status	Year	Co-Supervisor
Sagar Saha	Detecting cardiac conditions using ECG measurements	On-going	2021-22	
Amandeep Minhas	An approach to detect coronary artery disease using arterial blood pressure and PPG signals	On-going	2021-22	

Patents :

Name	Reg./Ref. No.	Date of Award/Filing	Organization	Status
SYSTEM FOR MODELLING BAROREFLEX MECHANISM OF A HUMAN SUBJECT DURING POSTURAL CHANGES	202031015867	7-9-2019	INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR and TATA CONSULTANCY SERVICES LIMITED	Application number allotted on 13.4.2020; Patent initially filed on 7th September 2019

Admin. Responsibilities :

Position Held	Organization	From	To
Associate Lab. Incharge, Process Control Lab., ICE Dept.	Dr B R Ambedkar NIT Jalandhar	2020	Present
Co-coordinator, UG Accreditation (ICE Dept.)	Dr B R Ambedkar NIT Jalandhar	2020	Present
Co-coordinator, Departmental information, newsletter and website (ICE Dept.)	Dr B R Ambedkar NIT Jalandhar	2020	Present
Co-coordinator, Alumni Relations (Department-level)	Dr B R Ambedkar NIT Jalandhar	2020	Present