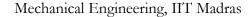
Shashank R

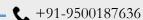




Personal Info



shashankramesh180398@gmail.com



A Team Anveshak

Education

2016-21[1]

Mechanical Engineering Dual Degree Indian Institute of Technology Madras

CGPA: 9.29/10

2016

12th class

VVS SPPUC, Bangalore

Score: 97.33%, State Rank: 7



Modern Control Theory

Design and Control of Serial Robots

Principle of Autonomous Guidance

Probability and Stochastic Processes

Nonlinear Control Systems

Artificial Intelligence in Manufacturing

Introduction to Machine Learning



Programming Languages (C, C++, Python)

 Mathematical Analysis Tools (MATLAB, Mathematica)

Robotic Operating System (Node Scripting, Gazebo, Rviz)

C programming for microcontrollers (Atmel Studio 7.0, Arduino)

Mechanical Design (Autodesk Fusion 360, Solidworks)

– PCB Design (Autodesk Eagle)



Publications

Patent – Nagamanikandan G., Shashank R., Asokan T., "A Device for Adjusting Joint Stiffness", IDF No.1861.



Technical Experience

Variable Stiffness Actuator | Research Project Sept'18 - present Nagamanikandan G, Prof. T Asokan

Developed a novel variable stiffness rotary joint for enhancing the capabilities and safety of a collaborative robot

- Formulated the forward dynamics of a 3-DOF underactuated serial robot with variable stiffness joint in Wolfram Mathematica

Implemented an offline optimal control for trajectory planning of the underactuated robot consuming minimum energy

• F T Motors, Sina Mobility | Internship May'19 – Jul'19
Self Balancing Bike

Implemented LQR control on a single axis Control Moment Gyroscope for the stabilization of a two wheeled vehicle

 Designed a compact embedded controller for the digital control of orientation and motion of a two wheeled vehicle

Team Anveshak | Team Lead

Feb'17 – present

Faculty Advisor – Prof. T Asokan

Conducted bootcamp sessions on robotics for 3 weeks covering concepts on robot kinematics, dynamics and control

- Supervised the implementation of a task space path planning algorithm for a 5R serial robot using python in ROS framework

iBoT Club, CFI^[3] | Coordinator
 iBoT Club, CFI^[3] | Coordinator

July'17 – March'18

Developing integrated knowledge base in Robotics

Guided over ten teams towards building floor sweeping robots in the Cleaning Bots Session organized by CFI

Conducted session on embedded system covering concepts like motor drivers, Arduino microcontroller and control algorithms



Achievements

Team Anveshak placed 1st in Indian Rover Challenge 2019 among 18 teams including teams from Poland and Bangladesh

Team Anveshak ranked 12th among 40 teams from all over the world in University Rover Challenge 2018 organized by Mars Society

Awarded for Technical Excellence in Carbon Zero Challenge organized by IIT Madras and US Consulate for implementing the intelligent lighting system on three streetlights.

 Cleaning bots session set the Asia and India Book of Records for building 45 bots sweeping 750 sq.ft of area