

# Rajendra Singh

Fourth year  
Computer Science and Engineering  
Indian Institute of Technology, Palakkad

**Address** : 315, Tilang-B, IIT Palakkad, Kerala - 678623  
**E-Mail** : 111601017@smail.iitpkd.ac.in  
**Phone** : +91 7073091997  
**Web** : [Linkedin](#), [Github](#), [website](#)  
**DOB** : 27<sup>th</sup> November 1997



## SUMMARY

- Skilled in AI and Robotics.
- Interned with UST Global, Researchshala and IIT Madras.
- Former Head, Robotics club, IIT Palakkad
- Selected for KVPY fellowship.
- IIT-Jee 99.3 percentile.

## EDUCATION

Program	Institution	%/CGPA	Year
B. Tech	Indian Institute of Technology, Palakkad	7.19 (Till VI Semester)	2016-Present
XII	Delhi Public School, Udaipur	89%	2015-16
X	Delhi Rajasthan Public School, Rajsamand	96%	2013-14

## SCHOLASTIC ACHIEVEMENTS

- Winner, [Kaizen Robotics](#) Competition, Lema labs. 2017
- Awarded [KVPY Fellowship](#) by DST, Govt. of India. 2016
- Qualified [IIT-Jee](#) Advanced 2016 with a percentile of 99.3 amongst a total of 1.2 million students. 2016
- [Best Student of Year Award](#) 2014–15, Rajsamand District Private Education Committee. 2015
- Awarded [Merit Scholarship](#) Class X, Army Welfare Education Society. 2014

## TECHNICAL SKILLS

Title	Skills
Robotics	Motion planning, perception, swarm robotics, control and manipulation, Manipulator kinematics and dynamics, brain computer interface
Reinforcement learning	MDP, TD methods, Monto Carlo, Multi-armed bandit, DQN, DDPG, Genetic algorithm
Data science	NLP, CNN, RNN, analysing unstructured data, sentiment analysis, topic modeling
Languages	C++ , Python and Java
Software/Tools	ROS, ROS2, Moveit, Gazebo, V-REP, Flexbe, Matlab, AutoCAD, Fusion 360, Atmel studio 6
Hardware	Rplidar A2M8, Realsense D435, Nvidia Jetson(Tx2, nano), Raspi3B+, GstarIV GPS, Zybo-zyng FPGA, KL25Z arm cortex-M0+ , Atmega16/32/2560, NodeMCU, GSM, Pyboard, OpenMV, PlutoX

## SELECTED PROJECTS

- [Implemention](#) of **slam** on [AGV](#) by sensor fusion of data from 2D lidar and 3D camera.
  - Vision based [control](#) and [trajectory](#) planning of **robotics manipulator** using pointcloud data.
  - [Path planning](#) for **swarm** of two drones, for Smart India Hackerthon 2019.
  - Built **EOG** based typing [system](#) for individual with motor neuron diseases.
  - Built automated **toilet cleaning robot**, Ranked 6<sup>th</sup> in Inter IIT 2017-18, IIT Madras.
  - Build [model](#) for **satellite image classification** using just 14 images, for Inter IIT 2018-19, IIT Bombay.
- For more projects, please visit: <https://iamrajee.github.io/projects/>

## EXPERIENCES

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- **Summer intern, UST Global, Trivandrum** May-July, 2019  
Studied [various](#) slam algorithm and implemented it using ROS by fusing sensor data of lidar and 3d depth camera. Later, I worked on control and planning of robotics manipulator for vision based pick and place task.
- **Data Science intern, Researchshala, Chandigarh** May-July, 2018  
Worked on [projects](#) related to transfer learning, topic modelling, web and pdf scraping, extracting and analysing useful information from unstructured data.
- **Vistaar Program, IIT Madras** May-June, 2017  
Studied state of art 3d printing technology and then [built](#) prusa i3 3d printer and a robotic arm using this printer.

## RELEVANT COURSES

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Area	Courses
Maths	Linear Algebra, Probability, Stochastic Process and Statistics, Discrete Mathematics
CS	DS and Algorithms, DBMS, OS, Computer networks, Compilers, Parallel programming
AI	Principle of machine learning, Deep learning and Reinforcement learning
Robotics	Robotics manipulation and control, embedded system, Signal and system, Engineering Mechanics, AutoCAD, Fusion 360, Biomedical and Instrumentation

## POSITION OF RESPONSIBILITY

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- **Head of Robotics Club, IIT Palakkad** July 2018 - May 2019
  - ▶ Teach basics and advance concept of robotics.
  - ▶ Mentor student projects.
  - ▶ Encourage student to participate in regional and national competition.
  - ▶ Prepare and lead team in competitions.
- **Event coordinator, Rajasthan-Assam, Ek Bharat Shreshtha Bharat, IIT Palakkad** January 2019
  - ▶ Organised the cultural event of Ek Bharat Shreshtha Bharat of Rajasthan-Assam under government of India, at IIT Palakkad.

## EXTRACURRICULAR ACTIVITIES

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- Teaching at secondary school of Palakkad under NSS, IIT Palakkad

## REFERENCES

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• **Mr. Ashok Nair**  
Director Service Delivery,  
UST Global, Thiruvananthapuram  
E-Mail: [ashok.nair@ust-global.com](mailto:ashok.nair@ust-global.com)

• **Mr. Shubham Jain**  
Founder and CEO,  
Researchshala, Chandigarh  
E-Mail: [shubham@researchshala.com](mailto:shubham@researchshala.com)

• **Dr. Piyush P. Kurur**  
Professor, Department of Computer  
Science and Engineering, IIT Palakkad  
E-Mail: [ppk@iitpkd.ac.in](mailto:ppk@iitpkd.ac.in)