

# Rahul Kumar

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## ACADEMIC DETAILS

Education	Institute	Year	CPI / %
B. Tech: Computer Science and Engineering	IIT Kharagpur	2016- Till date	9.60 / 10
Intermediate	DAV Kpildev, Ranchi	2014 - 2016	95.4 %

## COURSEWORK

- **Completed** (Academic)  
Programming and Data Structures, Algorithms, Discrete Structures, Introduction to Electronics, Signals and Networks, Symbolic Logic
- **To be completed by April 2018** (Academic)  
Software Engineering, Logic and Switching Circuits, Formal Language and Automata Theory, Probability and Statistics

## MAJOR PROJECTS

- **Kharagpur RoboSoccer Students' Group** (Research Project)     <http://krssg.in/>  
(Guide: Prof. Jayanta Mukhopadhyay , Feb'17 - till date)
  - implementing codes to make autonomous Soccer playing bots.
  - Implemented Finite State Machine architecture in Python for Small Sized League bots using ROS.
  - Research Areas: multi-agent robot system, Path Planning, Computer Vision, FPGA Architecture.
- **Action/Event Recognition for Safety Analytics** (Research Project)  
(Guide: Prof. Pabitra Mitra , Dec'17 - till date)
  - Implementing various papers on action recognition to exploit their usage for accident detection.
  - Automatic detection of abnormal events in visual surveillance system.
  - Research Areas: Computer Vision, ConvNets, Encoder-Decoder Models.
- **RRT Simulator**  
Link: <https://github.com/vernwalrahul/RRTSimulator/>
  - A GUI based interface for testing and analysis of various RRT algorithms.
  - Tools and Libraries Used: OMPL, PyQt and ROS.
- **Online Shopping Mall Management System**  
(Guide: Prof. Sudip Misra , Jan'18 - till date)  
Link: <https://github.com/vernwalrahul/Shopping-Mall-Management-System/>
  - Exploring various fields of software development lifecycle.
  - Developing a JAVA based software to provide an online management platform for mall admin, shop owners and customers, easing their services and requests.
- **IBM Blockchain Hackathon**  
Link: <https://github.com/vernwalrahul/KTJ-Blockchain/>
  - An application on digital certificates using blockchain technology to avoid fraud certificates and speed up the verification process.

## EXPERIENCE

- **Instructor** (MIT-IIT Robotics Workshop)  
(Guide: Prof. Pabitra Mitra , 1st May'17 - 15th May'17)
  - Conducted a fortnight long Robotics workshop for higher school students.
  - Introduced basics of C, C++, Processing and their applications in the field of robotics.
- **Image Processing Mentor** (IEEE Robotics Winter Workshop)

- A week-long IP workshop for 1st and 2nd year undergraduates at IIT Kharagpur, teaching basic Image Processing using OpenCV and C++.
- **Organizing Team** (Code-o-Soccer 2018)  
A national level strategic planning based event held at Kshitij, 2018.

## AWARDS AND ACHIEVEMENTS

- **KVPY 2016.**  
Secured All India Rank 9th in one of the prestigious examination initiated by Department of Science and Technology, Government of India
- **IIT JEE Advanced 2016.**  
Secured All India Rank 266 in JEE Advanced 2016.
- **Robocup 2017.**  
First team from India to qualify for SSL, Robocup 2017 held in Japan, among top 24 teams across the globe.
- **Best Fresher, Conquest, Kshitij 2017**  
Participated in an Robotics Event at Kshitij 2017 , Asia's largest techno-management fest. Awarded the best fresher at IIT Kharagpur.
- **IBM Blockchain Hackathon, Kshitij 2018**  
Secured 3rd position in the national level hackathon organized at Kshitij, 2018.

## TECHNICAL SKILLS

- **Languages** C, C++, Python, Matlab,  $\text{\LaTeX}$   
**Libraries and Tools** Tensorflow, OMPL , OpenCV, ROS, PyQt, Octave  
**Field of Interest** Computer Vision, Path Planning, Machine Learning, Decentralised Systems.