

Apoorva Kumar

ROBOTICS ENGINEER · MACHINE LEARNING ENTHUSIAST

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Education

IIT Guwahati, B.Tech Major in Electronics and Electrical Engineering	CGPA : 8.11/10	2016 - Ongoing	Guwahati, India
IIT Guwahati, B.Tech Minor in Computer Sciences and Engineering	CGPA : 8.5/10	2017 - Ongoing	Guwahati, India

Skills

Robotics	ROS, OpenCV, Stereo Vision, Visual Odometry
Programming	Python, C++/C, Java, Unity3D
Hardware	Arduino, Raspberry-Pi, IMU Sensor, Camera, RGBD Camera, Motors And Encoders
Machine Learning	Decision Trees, SVM, Neural Networks, CNNs, GANs, RNNs
Operating Systems	Windows, Linux

Work Experience

Strato IT, Protec Inc.

Anyang, South Korea

ROBOTICS & DEEP LEARNING INTERN

May 2019 - Jul. 2019

- Worked on building a visual and inertial odometer for automated cart.
- Implemented Deep Learning models like iResNet and PSMNet in Keras and Pytorch for disparity estimation of systems.
- Developed an easy-to-use python modules for further extending the research and project.

AppSecure

Bengaluru, India

API DEVELOPER & MACHINE LEARNING INTERN

May. 2018 - Jul. 2018

- Implemented a combined software for active sub-domain and port scanning for web-servers.
- With the above mentioned scanner trained a model to predict the presence of a word in the web-server.

Projects

Soil Nutrient Estimation Robot

IIT Guwahati, Guwahati, India

7TH INTER IIT TECHMEET | 5 MEMBER TEAM | 📄 GITHUB

Nov. 2018 - Dec. 2018

- Project aimed at easing the task of farmers while solving the problem of over-fertilization
- This model collects soil sample and using its solution and techniques of Colorimetry via a simple LDR and RGB-LED measures Nitrogen-Phosphorus-Potassium content in soil across farm lands.

Eye In The Sky

IIT Guwahati, Guwahati, India

7TH INTER IIT TECHMEET | 3 MEMBER TEAM | 📄 GITHUB

Nov. 2018 - Dec. 2018

- Achieved remote sensing of satellite data using deep learning semantic segmentation.
- Implemented 4 different algorithms UNet, PSPNet both with RGB Channels and One-Hot encoded channels.

ARLE(Automated Robot for Library Enhancement)

IIT Guwahati, Guwahati, India

4I LABS, IIT GUWAHATI | 9 MEMBER TEAM | 📄 GITHUB | 🏠 HOMEPAGE | 📺 YOUTUBE

Jul. 2017 - PRESENT

- Our aim is to build a robot which can pick and place misplaced books in the library into their correct shelves.
- Built a Four Wheeled Robot which can perform SLAM and visual localization in library environment according to any specified book.

Technologies for Soldier Support- Health Monitoring System

IIT Guwahati, Guwahati, India

6TH INTER IIT TECHMEET | 3 MEMBER TEAM

Dec. 2017 - Jan. 2018

- Designed a human wearable suit using MEMS Sensors namely MPU9250, Temperature Sensor and Heart Rate sensor to predict the physical state of ability and inability of a soldier during any battle.
- Build with a ESP8266, it transmitted data of the soldiers status to the base station.

Awards

2018	Bronze Medal , TCTD, 7th Inter IIT TechMeet, IIT Bombay	Bombay, India
2018	Bronze Medal , Technologies for Soldier Support, 6th Inter IIT TechMeet, IIT Madras	Madras, India
2018	1st Position for 2 consecutive years , Electrovote, Inter-Hostel Tech-Innovation Event, IIT Guwahati	Guwahati, India

Positions of Responsibility

Apr. 2018 - Apr. 2019	Secretary , Robotics Club, IIT Guwahati	Guwahati, India
Feb. 2018 - Apr. 2019	Co-Founder and Manager , IITG.ai, IIT Guwahati	Guwahati, India
Apr. 2017 - Apr. 2018	Technical Secretary , Umiam Hostel, Hostel Affairs Board, IIT Guwahati	Guwahati, India
Apr. 2017 - Apr. 2019	Team Head , ARLE, 4i Labs, IIT Guwahati	Guwahati, India