

# Akhilesh Kumar

☎ (+91) 98-2975-4634 | ✉ akhilesh\_k@outlook.com | 🏠 www.akhileshk.in | 📷 akhilesh-k | 📺 akhilesh-k

## Education

### Jaypee University of Information Technology

B.TECH, ELECTRONICS AND COMMUNICATION ENGINEERING | CGPA 6.5/10.0

Waknaghat, India

July 2016 - 2020 (Expected)

## Projects

### Farming Robot: AGROBOT

MENTOR: PROF. MOHIT GARG

Sept 2017 - Present

- It is a multi function robot with autonomous grabber for weeding and seeding and Analysis.
- A mobile robot to perform automatic seeding and moistening the soil after the seeding at a defined space interval using Manipulators.
- It has a Navigation system, Data Analysis processing running in back end, Equipped with camera at different position for monitoring and decision making

### IoT based Pollution Monitoring and Waste Management for smart cities

ACM ELECTRONICS TEAM

May 2017 - Jun 2017

- Established communication between dustbins across the city with server on web using xbee modules on Raspberry Pi.
- Conceptualized the Route Optimization using Google maps. Used GPS Gtop.19 modules to interface the GPS data with program.
- Backend of program runs on flask and frontend on nodered UI.

### Motion Imitating and Path Replicating Robot

ACM ELECTRONICS TEAM

Mar 2017 - Apr 2017

- Arduino based Bot interfaced with Raspberry Pi capable of imitaing paths.
- Bot uses camera for input to handle controls using OpenCV. Developed python client for real time video stream.

### Underwater Glider for Real Time Mapping with SensorTag IoT System

ACM ELECTRONICS TEAM

Dec 2016 - Jan 2017

- Accomplished automated glider controlled movement with a ballast system.
- Developed obstacle-avoiding feature and algorithm for mapping of environment using MATLAB
- Interfaced TI CC2650STK SensorTag with Raspberry Pi to retrieve data in real time.

## Certifications

### Robotics Specialization

COURSERA | UNIVERSITY OF PENNSYLVANIA

Jun. 2017 - Present

- Pursuing Robotics Specialization coursework from coursera. Already completed 4/6 courses.
- Completed courses on Aerial Robotics, Robotics: Perception, Robotics: Computational Motion Planning and Robotics: Mobility
- Learned various aspects of Designing, Simulations and controls technique of Robotics. Completed all the verified assignments on Octave as part of the course.

### Machine Learning

COURSERA | STANFORD UNIVERSITY

August 2017

- Successfully completed course on Machine Learning by Prof. Andrew Ng, Stanford University.
- Learned various algorithms for the foundation of Machine Learning and implemented on octave.
- Completed a Rudimentary Spam Classifier Project as a part of Machine Learning Course.

## Technical Skills

**Languages:** Python, C++, C, Bash, T<sub>E</sub>X, Lua (Beginner)

**Libraries & Packages:** cv2, SciPy, NumPy, Matplotlib, Tkinter

**Softwares:** Octave, Simulink, SolidWorks, Gazebo

**Hardware:** ATmega, Raspberry Pi, mbed LPC1768, TI Launchpads

**Systems:** Linux: Debian/Ubuntu, OpenCV, ROS, Internet of Things,

## Extracurricular Activity

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### Aerial and Underwater Robotics Society | JUIT

CORE MEMBER

Jun. 2017 - Present

- Founded the Robotics Society for Researches in Aerial Robotics.
- Collaborating with team members on projects related to computer vision and Robotics.

### ACM-JUIT Student Chapter

MEMBER, ELECTRONICS TEAM

Aug 2016 to Present

- Gained expertise in programming hardware. Worked extensively with other members on various development boards
- Participated and Organized various events and conferences.
- Conducted workshops on Introduction to Programming.

### TIEDC (Technology Incubator and Entrepreneurship Cell of JUIT)

CORE TEAM MEMBER

March 2017-Present

- Gained knowledge about several business fields like Management, Strategy, Financial and marketing from group study.
- Gained expertise in business strategy areas and insight for various industries from weekly industry analysis session.

## Positions of Responsibility

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- 2017 **Instructor**, ACM-JUIT | Conducted Workshop on Introduction to Robotics and Internet of Things
- 2017 **Co-Founder**, Aerial Robotics Society | Conducted Workshop on Computer Vision.
- 2017 **Co-Ordinator**, Robotics & Embedded Systems Lab | Team Leader for eYRC
- 2017 **Organizing Committee**, Murious XI (Annual Technical Festival)