

## Akshith R

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### QUALIFICATIONS

**Vellore Institute of Technology, Vellore, India**

Bachelors of Technology in Electronics and Communication Engineering

*June 2018-April 2022 (expected)*

*Cumulative GPA: 8.80/10.0*

### AREA OF EXPERTISE

**Design& Simulation Tools**

MATLAB, Fusion360, Eagle, Proteus, Solidworks

**Programming Tools**

Keil, STMStudio, CubeIDE, ROS

**Programming Languages**

Python, C++, Embedded C, Shell, HTML, Java, APL, Verilog

**Others**

Power electronics, Embedded and Control system, Instrumentation

### PROFESSIONAL EXPERIENCE

**Research Intern @ Indian Institute of Science (IISc), Bengaluru, India**

*Sept 2021 - Nov 2021*

Worked on Human Robot Collaboration system using UR5 Cobot on control systems and planning algorithms. Implementing VR to improve perception and improve safety and productivity. (Supervised by Prof. Abhra Roy Chowdhury)

**Globalink Research Intern @ York University, Toronto, Canada**

*June 2021 – September 2021*

Designed and adapted dynamic equations for FANUC Robotic manipulator. Worked on modeling the FANUC robotics arm. Developed an algorithm for Image based Visual Servo with eye-in-hand configuration.

(Supervised by Prof. George Zhu)

**Illuminify Private Ltd (Accio Robotics), Bengaluru, India**

*April 2020 – January 2021*

Designed the electrical architecture and the control system of a prosthetic arm. Developed mobile robots for autonomous indoor assistance. Designed a beetle robot capable of traversing rough terrain.

**Team ROVERX, VIT Vellore, India**

**Captain**

*March 2020 - Present*

**Electronics and Instrumentation Engineer**

*May 2019 - March 2020*

Designed Mars prototype Rovers and competing on international level with other universities in URC, IRC and IRDC competition. Involved Power Electronics, Embedded Systems, control systems and sensor instrumentation.

**Creation labs, VIT Vellore, India**

**Lab Manager**

*May 2020 - Present*

**Research Engineer**

*May 2019 - May 2020*

Member of a group of engineers exploring different research ideas and implementing it on varied projects involving different domains. Conducting national level events like IDRL and working in collaboration with ISRO on low orbit satellite payload.

### PUBLICATIONS

**MDPI BIOSENSOR JOURNAL 2021**

*Published*

**Recent advances on IOT-assisted wearable sensor systems for healthcare monitoring.**

The paper compiles various communication technologies and the devices commonly used in IoT-assisted Wearable Sensor Systems and deals with its various applications in healthcare and their advantages to the world. A comparative analysis of all the wearable technology in healthcare is also discussed with tabulation of various research and technology.

## PROJECTS

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### **Robotic Arm for Equipment Panel Servicing**

The robotic arm was a 6DoF design with an LRL configuration with a differential End-effector. It was designed with the intention to make the control intuitive and to access a cartesian plane with speed and precision.

### **Rover Prototype for Martian Exploration**

It involved designing a Martian based rover that could collect and analyze the environment, soil and rocks and communicate the data forward. It also involved designing robotic arm that could aid humans in the exploration.

### **Soil collection and onboard analysis system**

The design involves a dynamic scoop system that collects soil and stores it in different slots where multiple tests are done and its results are recorded. A variety of motors are used to design the dynamic system considering speed and compactness.

### **Prosthetic Right Arm**

This project involved designing a right arm that had the functionality to hold different positions of the hand that could be programmable by the user. It was designed with micro DC motors and compact custom PCBs that is embedded in the arm.

### **Mars Rover Prototype**

The project involved designing multiple versions of rover systems that can navigate extreme terrains and perform a variety of tasks. It involved both manual and autonomous control over long distance communication using an array of cameras.

### **SpaceShare – Designing space-grade PCB**

This project involved designing a space-grade PCB with an array of sensors that will collect and relay the data from a low orbit satellite. This project was done in collaboration with ISRO & Exceed Space.

### **Geo-Fencing**

Creating a virtual polygon using GPS coordinates to monitor the location of the subject and send notifications in case of breaching the perimeter. The concept implemented has various applications for oversight of people.

## ACCOLADES AND RECOGNITION

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<b>University Rover Challenge (URC) 2021</b>	87.63/100 in Finals. Rank yet to be posted.
<b>International Rover Design Challenge (IRDC) 2020</b>	8 <sup>th</sup> Worldwide. Drive System Innovation award
<b>International Mars Hackathon (IMH) 2020</b>	Placed 4 <sup>th</sup> Worldwide. 3 <sup>rd</sup> in Asia
<b>Indian Rover Challenge (IRC) 2020</b>	Placed 4 <sup>th</sup> Worldwide. 2 <sup>nd</sup> in Asia
<b>University Rover Challenge (URC) 2019</b>	Top 10 Worldwide. 3 <sup>rd</sup> in Asia

## EXTRA-CURRICULAR

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**RASTRAPATI SCOUT** A member of Bharat Scouts and Guides. I was awarded the Rashtrapati Award from the President.

**IDRL (Indian Drone Racing League)** Member of the organizing committee. Design and Implementation engineer of the course.

**IETE (Institute of Electronics and Telecommunication Engineers)** Member of the technical team of the Chapter. Worked on various projects and conducted events.

**SYNERGY** Member of the organizing committee of the National level symposium with multiple workshops on robotics.

**ACCESS DENIED** Crew member of the organizing committee of a 2-day national level Hackathon.