

Live Surveillance

Real Time Video Streaming

&

Prediction using Deep Learning

PHASE I:

Objective:

1. Real Time streaming of video
2. Real Time Prediction

Skills that will be used for accomplishing this Project:

1. Camera Vision Tools
2. PCB Designing
3. Mechanical Designing
4. Object Detection Model
5. Cloud Computing Architecture
6. Mobile App Development
7. Backend Development
8. Embedded Software Developer

Detailed Info about above given points

- 1. Camera Vision Tools:** There are various camera which give desired result per frame. You will learn the usage of different kinds of camera and its implementation in the proposed architecture from Cloud Server Architecture.
- 2. PCB Designing (Eagle or Any Alternative):** Printed circuit board (PCB) design brings your electronic circuits to life in the physical form. Using layout software, the PCB design process combines component placement and routing to define electrical connectivity on a manufactured circuit board.
- 3. Mechanical Designing (SolidWorks or Any Alternative):** Mechanical design means the design of components and systems of a mechanical nature—machines, products, structures, devices and instruments. For the most part mechanical design uses mathematics, materials, and the engineering-mechanics sciences.

4. **Object Detection Model (YOLO Model in Tensorflow.js):** TensorFlow.js is an open source machine learning library that can run anywhere JavaScript can. It's based upon the original Tensor Flow library written in Python and aims to re-create this developer experience and set of APIs for the JavaScript ecosystem.
5. **Cloud Computing Architecture (Linux):** Cloud computing technology is used by both small and large organizations to store the information in cloud and access it from anywhere at any time using the internet connection. Cloud computing architecture is a combination of **service-oriented architecture** and **event-driven architecture**.
6. **Mobile App Development (React Native):** Mobile app development is a process for building mobile applications that run on mobile devices. Hence, the mobile app development process requires creating software that can be installed on the device, and enabling backend services for data access through APIs, and testing the application on target devices.
7. **Backend Development (Python):** Backend development languages handle the 'behind-the-scenes' functionality of web applications. Its code that connects the web to a database, manages user connections, and powers the web application itself. Backend development works in tandem with the front end to deliver the final product to the end user.
8. **Embedded Software Developer (Embedded C):** Embedded software developers are responsible for designing, developing, optimizing and implementing the software that is programmed into devices built around a microprocessor. We write code to solve problems and implement systems that make a physical hardware device work through software.



Skills that you can build from this project:

1. Python
2. JavaScript
3. Embedded C
4. SolidWorks
5. Raspberry Pi
6. Vision Tools
7. Linux
8. Deployment in Cloud
9. Django
10. React Native
11. Deep Learning

Anyone who wants to learn any of these technology for their growth can apply for the vacant position in this project.

NOTE: Must have some relevant Experience for which you are if not from 1st Year of your studies.

Eligibility:

1. Must be from 1sem, 2sem, 3sem, 4sem, 5sem
2. Must be from Zakir Husain College of Engineering & Technology.
3. Must be Registered member at **AMURoboclub**
4. Must be Registered member at **The Creator Home**

How to Do Registration?

AMURoboclub → Contact at +91997423637 (Praful Varshney)[Charge Applicable]

The Creator Home → <https://www.thecreatorhome.com/accounts/login/> [Free]

Interviews will be conducted for the given vacant position

Position	Vacant Number
Embedded Software Developer	1
Backend Developer	1
Mobile App Developer	1
Computer Vision Developer	1
PCB Designer	1
Volunteer	3+
Full Stack Developer	1

Team Members Info:

1. Vivek Raj Singh :
 - a. Full Stack Developer at **Sensovision, Bangalore**
(<https://www.sensoviz.com>)
 - b. Founder of **The Creator Home** (<https://www.thecreatorhome.com>)
2. Shilpy Varshney:
 - a. Embedded Software Developer

Stipend for Trainee: No Stipend for Phase I for trainee

Stipend for Junior Developers: On Performance Basis

Stipend for Senior Developers: 10k/month

PHASE II : TBD LATER