**Introduction:**

* **Overview:**

This project helps us control devices using hand remotely. The purposed AI virtual mouse system can be used to overcome problems in the **real world**such as situations where there is no space to use a physical mouse and also for **persons who have problems**in their **hands** and are not able to **control a physical mouse**. Also, the **COVID-19 situation, i**t is not safe to use the devices by touching them because it may result in a possible situation of the**spread of the virus by touching the devices.**

* **Objectives:**

The proposed **AI virtual mouse** can be used to overcome these problems since hand gestures and hand Tip detection is used to **control the PC mouse functions by using a webcam or a built-in camera.**

**Some applications:**

1. *The****COVID-19 situation***, it is not safe to use the devices by touching them because it may result in a possible situation of spread of the **virus by touching the devices, so it helps us to reduce the spread of the virus.**
2. ***Smart homes*, it controls in devices such as lights and thermostats through hand gestures for a seamless and convenient home automation experience.**
3. ***Gaming and Entertainment*, it enhances gaming experiences by allowing players to control characters, perform in-game actions and navigate virtual worlds using hand gestures.**

* **Review on deep learning:**

Deep learning is a subfield of machine learning that involves training artificial neural networks to perform tasks without explicit programming. It relies on algorithms known as artificial neural networks, which are inspired by the structure and functioning of the human brain. These networks consist of interconnected layers of nodes (artificial neurons) that process and transform input data to produce an output.

**Input layer:**Data enters through the input layer.

**Hidden layers:**Hidden layers process and transport data to other layers.

**Output layer:**The final result or prediction is made in the output layer.

**Some examples of deep learning:**

1. In healthcare, deep learning is used for medical image analysis, disease diagnosis and drug discovery.
2. Deep learning contributes to advancements in robotic systems, enabling robots to perceive and interact with their environment through visual and sensory inputs.
3. Deep learning powers advancements in NLP, enabling machines to understand, interpret and generate human language. Applications include language translation and chatbots.

There are a wide variety of career opportunities that utilize deep learning knowledge and skills. In addition to data, machine, and deep learning engineers, these include: software engineers, data analysts and data scientists.