Term Project:

Space Writing using Neural Network

Guided By**:- Dr. Shivanjali Khare**

Group Members:
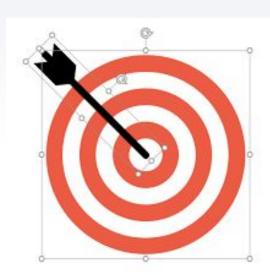Parth Vaghasiya
Smit Kakadiya
Bhargav Patel

Project Topic:-

▸ Space writing recognition with Neural Network Architecture.

▸ Space writing is the concept of writing characters in free space with the movement of the hand palm or fingers, or any other writing implement such as a pen.

▸ It is done with the help of a circular-like device that works as a fixed-color marker before a camera.

Statement of Project Objectives:-

▸ Space-writing recognition is a type of gesture recognition in which motions are used to represent characters and digits written in the space.

▸ On accessible space-writing datasets, we will study several interpolation approaches and devise a way to identify space languages using recognition rate.

▸ For all datasets we will check about our method performance for all state-of-the-art methods by a wide margin, using both user-dependent and user-independent principles.

Approach (Tools & Techniques):-

▸ To fulfill the project's core goal of space writing, we must use the following technique:

  ▷ Object segmentation in writing
  ▷ Identification of the writing-object center
  ▷ On a two-dimensional plane, trajectory tracking and projection are performed
  ▷ Recognizing the Persona
  ▷ Architectures of Networks

Deliverable (Tools & Techniques):-

▸ The project delivery is going to be in such a way that the solution avoids the usage of additional sensors by using a generic web camera incorporated in the any other monitor device or laptop.

▸ The lack of depth information available with specific sensors makes processing and representing text data more complex.

▸ To solve this difficulty, image analysis is used to divide the writing device, such as a fingertip or a marking tip, and then track its motion to projected the three - dimensional computer stroke data to a two - dimensional plane.

Evaluation Methodology:-

- ▸ The notion of Neural Network can be used to write in space.

- ▸ We will use the Python programming language and numerous functions like as Keras Model, Collections, NumPy, OpenCV, and so on.

- ▸ In order to attain our project's goal, we'll set up an experiment, conduct an error analysis, and employ recognition rates.

- ▸ We propose a method for recognizing space writing in real time.

Thank You

Feel free to ask any questions…!