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| ROCK, PAPER, & SCISSORS RECOGNIZER  (USING AI & MACHINE LEARNING) |
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ROCK, PAPER, & SCISSORS RECOGNISER

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| Why this? It is very helpful for creating games or object detection projects. So, we gathered some dataset sample from the user which is used to understand the gesture of the hand. Implemented a hand gesture recognition algorithm. Initially, the skin was segmented to separate it from the background. I have trained a model to recognize my hand signs when it is inside the box, so when the model predicts my hand signs. The application is designed in a way that the model can predict the gesture and calculate the proximate accuracy.  Method of approach to solve?  Here is a breakdown of our application in steps:  Step 1: Gather Data, for rock, paper scissor classes.  Step 2: (Optional) Visualize the Data.  Step 3: Preprocess Data and Split it.  Step 4: Prepare Our Model for Transfer Learning.  Step 5: Train Our Model.  Step 6: Check our Accuracy, Loss graphs & save the model.  Step 7: Test on Live Webcam Feed.  You should have Tensorflow 2.2, OpenCV 4x, and scikit-learn 0.23x installed in your system. |
| *Library used:*   * Os * Cv2 (OpenCV) * Numpy * Matplotlib * Time * Sk\_learn * Tensorflow * Random * Scipy |
| How to install packages?  (Make sure you have installed python in your system)  Open command prompt and then use the command given below for installing the packages-   1. OpenCV:   pip install opencv-python   1. Matplotlib:   pip install matplotlib   1. Tensorflow:   pip install tensorflow   1. Datetime:   pip install DateTime   1. Numpy:   pip install numpy   1. Sk\_learn:   pip install scikit-learn  Result  We apply our method for predicting the gesture shown by the user. Our method produces reasonably accurate results when a good number of sample data is used to train the model. If the model gives wrong predictions, then their might me some issue in training or data samples.  Conclusion  **We presented a modelling approach that we believe can be easily adopted by others, and immediately useful for future planning in various kind of projects or activities.** |