

# Plant through Energy Generation in Modified Condition

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## **Abstract**

*Information communication between two peers can be done using various mediums. These mediums can be either linguistic or gestures. The development of procedure for realizing gestures into meaningful information plays a pivotal role in instances where linguistic feature cannot be taken as a basis and gestures can be used as the alternative for the conveying the same. This paper presents a very simple and efficient approach for recognizing the hand gesture that represents numbers from zero to nine. The work basically represents the active and in-active fingers with binary value 0 and 1 respectively, in different combination for representing different numbers. The method of representing the hand gesture in binary pattern contributes a lot for increasing the performance of classification process. The binary Support Vector Machine (SVM) is considered as a recognition tool.*

**Keywords:** Information Communication, linguistic feature, hand gesture, binary pattern, support vector machine.

## **1. Introduction**

Digital Cameras are now integrated into personal computers, mobile cellular devices and handheld systems. These devices usually include a powerful microprocessor, capable of performing millions of computations per second. The technology on digital cameras and microprocessors are advancing rapidly that it is possible to create a human computer interfaces using these resources for recognition of user gestures. The Gesture recognition interface acts as a communication channel between humans and machines [1]. The human-machine interaction is similar to human-human interaction, in which, the valuable information are communicated using the human organs like hand gesture, head movement, face expression, voice communication and overall body posture. The design of a gesture recognition system should be based on common hardware support such as web-cams or mobile-integrated cameras, to be applicable to current PCs, mobile devices, Digital Cameras, etc. While designing such systems, certain parameters have to be included, so that the system will be able to operate under complex or non-uniform background, i.e., different light intensity and noisy environment, etc.

## **2. Literature survey**

There are several approaches that have been used to design a hand gesture recognition system. In all the approaches, the primary focus was given to feature extraction of the hand gesture and it was found that the better feature extraction step is performed, better will be the performance of classification. Ilan Steinberg et. al, proposed a method of recognizing hand gesture, by considering each pixel of the binary image as a feature. To reduce the complexity of computation for classification, the size of the images was reduced. Omlin and Vapnik et. al., have recognized user hand gesture using color histogram as their feature, in which, the whole image was divided into smaller blocks and plot the corresponding histogram, for classification. Mokhtar M. Hasan et. al., observed that the finger-tip can also be used as a feature for recognition[2].

## **3. Background**

The schematic arrangement of equipments of steam power plant is shown.

### 3.1 The steam generation section

This section includes furnace to burn the coal, boiler to produce high pressure steam at desired temperature, an economizer, and a super heater. Safety valves are also located at suitable points to avoid excessive boiler pressure. Heat produced due to burning of coal is utilized in converting water contained in boiler drum into steam at suitable pressure and temperature which is passed then passed through super heater [3].

### 3.2 Evaluation

Pressure (H.P), Intermediate pressure (I.P) and Low pressure (L.P) turbines and then passed through the exhaust from L.P turbine is taken in the condenser in which pressure depends upon flow rate and temperature of cooling water and on effectiveness of air removal equipment. Water circulating through the condenser is taken from the canal. Bled steam taken from the turbine at suitable extraction points is sent to low pressure and high pressure water heaters[4].

Nasser H. Dardas in, used a bag of feature for classifying hand gesture. In this approach, all the key points of the training images were extracted and these key points are mapped to its corresponding histogram feature vector for classification.

Oleg Rumyantsev et. al introduced an efficient method for recognizing hand gesture, based on PCA method, in which, the test image and database images were represented using Eigen values and the hand gestures were correctly classified using the Euclidean distance of these Eigen values.

## 4. Proposed methodology

This project basically deals with the design of a system that acquires a user's hand gesture and classifies it based on the predefined hand gestures, stored in a database. The design of a system is basically divided into parts, namely, pre-processing and classification phase. The figures 1 shown below are the list of gestures that the system will recognize it correctly

## Conclusions

This paper has presented the results of energy and exergy analysis performed in a steam power plant. From the energy analysis, the overall plant energy losses are calculated as 68%. The results of the exergy indicate that the boiler produces the highest exergy destruction. On comparing the three turbine stages, the results of the analysis indicate that the HP and IP turbine produces.

## References

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