

Pattern recognition is the technology by which text in an image or PDF document are detected and extracted. The general method is to detect text pattern and compare it with predefined text templates of the font. So if the image contains a text pattern of the character then the pattern is matched with its corresponding template using comparison algorithms. The primary technique to implement this technology is Optical Character Recognition. Though this method is simple and fast, it cannot detect many fonts. Accuracy of the matching algorithm may not be very accurate to detect all the data in the document.

ICR stands for Intelligent Character Recognition. The specialty of these ICR forms is that the application detects the text patterns and analyses them during processing itself to get the text. ICR forms can recognize more fonts with far more accuracy than traditional OCR softwares. ICR forms have self learning algorithms referred to as neural networks. These networks help in recognizing patterns automatically and update the database. This is very useful in handwriting recognition. The ICR form analyzes the handwriting and finds patterns of the characters. It then builds a database of the text pattern templates.

ICR forms are mainly used for Automatic forms processing. The form is first captured as an image and unnecessary information like background is removed. The ICR form is then created by scanning the image file and detecting the handwritten text. The database containing the text templates is then created based on the scanning. Then validation of the characters is carried out. The validation of the characters is done in stages where individual characters are first validated. Then a group of characters are then validated together as they may not be recognized when considered as single characters. This ensures that some discrepancies in the handwriting due to human inconsistency are eliminated. Then a final manual validation process is carried out to eliminate any other errors that might have occurred during scanning process. ICR forms are also used to determine the legality of votes during election. It helps in reducing long hours of manual work of data entry of hand written forms. ICR is more of an extension of OCR technology.