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Conference Papers

1

20-21

Materials Today: Proceedings  
Volume 5, Part 4, 2021, Pages 1588-1593

# A comparative study on the thermal behaviour of PPC and OPC cement

Vivek Nani <sup>✉</sup>, P. Harsha Praneeth <sup>✉</sup>, Vikas manchana

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<https://doi.org/10.1016/j.matpr.2020.05.708>

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## Abstract

Spectroscopy is the interaction between matter and electromagnetic radiation, which is useful in the determination and characterisation of various chemical composition existing in the material. Present paper, focuses on predicting the extent of thermal damage on hydrated Portland Cements (PC), using Fourier Transform Infrared Spectroscopy (FTIR). The hydrated specimens of Portland Pozzolana Cement (PPC) and Ordinary Portland Cement (OPC), were subjected to temperatures ranging from 27 °C – 800 °C, for an interval of every 100 °C was analysed. Variation in the absorbance peaks obtained from FTIR, is correlated with the Thermal analysis (TA). At temperatures beyond 400 °C, reduction in the absorbance values at wavenumbers of 3430 – 3440 cm<sup>-1</sup> of Ettringite phase for PPC and OPC specimens was observed. However, in OPC specimens, an increase in the absorbance values of Portlandite phase at wavenumbers ranging from 3640 to 3645 cm<sup>-1</sup> was observed. The phase changes taking place in the PC specimens observed using FTIR, are in good agreement with the mass loss and heat flow plots obtained from TA. Therefore, it can be concluded that FTIR analysis is suitable test method in predicting the thermal damage of concrete specimen.

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Keywords

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# Prediction of House Price Using Machine Learning Algorithms

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**Abstract**— People are very careful when they want to buy a new house with market strategies and their budgets. The objective of this paper is to predict the house prices for non-house holders based on their aspirations and financial provisions. By analyzing different parameters like area of the house, square feet of the house, no of floors in the house etc. This research work has utilized the dataset from Kaggle.. An analysis is performed by applying advanced machine learning regression techniques such as Linear regression, KNN Regression, Random Forest Regression, Decision Tree Regression, Extra Trees Regression etc. to attain the most efficient and least error driven regression technique. From the analysis performed, an observation has been made that Catboost Regression Algorithm has outperformed other algorithms. The model predicts the final output with respect to correlated attributes in the dataset.

**Keywords**—component; formatting; style; styling; insert (key words)

## I. INTRODUCTION

Machine learning is a subset of artificial intelligence. The machine is learning by itself and testing through the existing dataset using certain algorithms and gives more accurate results than a manual work. Machine learning algorithms uses existing data as input to predict new output values for new input values [1]. Machine Learning is majorly bisected into two sections, namely supervised learning and unsupervised learning. Supervised learning is where the program is trained on a predetermined set of data and to be able to predict when a new data is given. Unsupervised learning is where the

program tries to find the relationship and the hidden pattern between the data.

There are numerous machine learning algorithms in recent times that can be implemented and applied on to predict the desired output, but each and every algorithm works differently for various kinds of datasets. We are going to measure the performance of the algorithms upon house pricing prediction datasets with respect to the Root Mean Square Error (RMSE) and implement the best performing algorithm in the final model[2].

The dataset used in the analysis phase will undergo preprocessing which will help to improve the data redundancy and missing data, this will improve training and the accuracy of output prediction[6][7].

## II. LITERATURE SURVEY

The presently existing process for buying or selling a house is through a broker, who acts as a third party between the buyer and the seller and someone who takes commission from both sides for the deal that he gets for his customers. This has been the part of real estate for a long time now and effects the house prices as the third party looks to make profit out the deal, which isn't fair to both the buyer and the seller as the buyer has to spend extra money to the third party for the deal and the seller has to share some part of what they earn[4][5]. Mousavi et al proposed a combination of cross validation, swarm optimization and support vector regression is proposed in predicting the cost of new product development [8][9]. Zhigang Jiand et al proposed a data driven based



# WORD SENSE DISAMBIGUATION USING CONTEXT DEPENDENT METHODS

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## Abstract

In NLP, the challenging and crucial task is Word Sense Disambiguation (WSD). Many Natural Languages have many ambiguous words with more than one sense. Depending on the context the sense of the ambiguous word is identified, this process is termed as word sense disambiguation (WSD). WSD algorithms are classified as context dependent and context independent algorithms. This article discusses about context dependent algorithms QEWTS and QEGBCPR and their performances are compared using the evaluation metrics such as Normalized Discounted Cumulative Gain (NDCG) and Mean Average Precision (MAP) metrics. The data set used is Lexical Knowledge Base (LKB), which is developed from training data and is used for evaluation process.

**Keywords:** Natural Language Processing, Word Sense Disambiguation, Lexical Knowledge Base, Context Based, WordNet, Normalized Discounted Cumulative Gain, Mean Average Precision.

## 1. INTRODUCTION

To develop any application in NLP, like question answering, language understanding and machine translation we use WSD system. WSD algorithms [1]

are classified as context dependent and context independent algorithms

In context dependent algorithms, the input context words around the ambiguous word are considered to identify the appropriate sense of an ambiguous word where as context independent algorithms are the brute force methods, without considering the input context words around the ambiguous word, the appropriate sense is identified. Given the input text with ambiguous word. The text is preprocessed by using tokenization, stemming and stop word removal process. Now the meaning of the ambiguous word is identified by using the context dependent algorithms. The ambiguity level of the ambiguous word is determined by using entropy and threshold values. Based on the ambiguity level, the WSD algorithm is based on context is proposed using the context span of 2 to 4 words proximity, which are used to identify the appropriate sense.

## 2. LITERATURE SURVEY

E. Agirre, O. L. De Lacalle, And A. Soroa[1] discussed about the context dependent and context independent algorithms based on page rank algorithms and also explained the random walk algorithm on the graph which is a knowledge based approach.



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 Book  
coverInternational Conference on Emerging Applications of Information TechnologyEAIT 2021: **Advanced Techniques for IoT Applications** pp 233–242

## Word Sense Disambiguation System for Information Retrieval in Telugu Language

Neeraja Koppula, J. Pradeep Kumar, Koppula Srinivas Rao & G. Kiran Kumar

Conference paper | First Online: 03 August 2021

239 Accesses

Part of the Lecture Notes in Networks and Systems book series (LNNS, volume 292)

### Abstract

Nowadays, In Natural Language Processing (NLP), using artificial intelligence is a open challenge. Word Sense Disambiguation (WSD) is a sub field of artificial intelligence. In this research paper, WSD system is developed and validated for regional Telugu language. Many Natural Languages are having many ambiguous words. The word having more than one sense is known as ambiguous word or polysemy word. Word Sense Disambiguation is termed as the methodology of finding the appropriate sense of the ambiguity word. To develop WSD system a training

  
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### Abstract



Document Sections

- I. Introduction
- II. Literature Survey
- III. Existing System
- IV. Proposed System
- V. Data Flow Diagram of Proposed Method
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**Abstract:** There is a significant change in technology, virtual reality (VR) has been used in this article as the simplest way of visual activity and interaction technique which pro... [View more](#)

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**Abstract:** There is a significant change in technology, virtual reality (VR) has been used in this article as the simplest way of visual activity and interaction technique which provides visual nodal options supported by the automated lip-reading technology. With this advancement in the technology, the state of the human can be identified and captured through the lip movements. Deep Learning is used to analyze the real time thinking of the human visual choices. Using image processing technique, virtual reality technology is used to identify the driver's visual features and evaluate the critical time thinking. The ancient lip-reading recognition system, the need for responsive applications is difficult to fulfill. Deep Learning is now the emerging technique of artificial intelligence which acts as a normal human brain with the thinking capability. It consists of different layers which are used to evaluate the details like neurons in brain. In this article, the surface area of the lip is taken as the key element or the key feature



# Secure Data Sharing in Images Using Cryptographic Approach

International Conference on Emerging Applications of Information Technology

EAIT 2021: Advanced Techniques for IoT Applications pp 356-364 | Cite as

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- P. Neelakanta Rao (1)
- Neeraja koppula (1)

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Conference paper

First Online: 03 August 2021

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Part of the [Lecture Notes in Networks and Systems](#) book series (LNNS, volume 292)

## Abstract

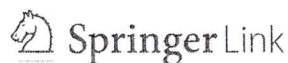
Visual cryptography is the most secure form for exchanging the information. The implementation is done through image files. Image data sharing is a way which is used to exchange the sensitive data in the form of pictures in a secured way. Few security problems are encountered if the image is confidential and is shared only with the authorized user. Image sharing cryptography comes into picture where the unauthorized user can't view the actual image. the original picture is hidden with the multiple layers of images to provide the security and it can be viewed with the key for decrypting the image. This technique is useful to secure the confidential and the copyright images without any external risk. In the multimedia system, the message will be encrypted with the use of public key encryption algorithm, this encrypted data will be superimposed on the image file. The copyrights are protected besides preserving the privacy of user, whose identities are only revealed in case of illegal re-distribution. In our proposed system Blow fish algorithm is used. This algorithm is a block cipher. The text is divided into fixed length of blocks during encryption and decryption process.

## Keywords

Data sharing Steganography Visual cryptography Security Image processing  
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# Food Calorie Estimation System Using ImageAI with RetinaNet Feature Extraction

International Conference on Emerging Applications of Information Technology

EAIT 2021: Advanced Techniques for IoT Applications pp 93-102 | Cite as

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Conference paper

First Online: 03 August 2021

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Part of the Lecture Notes in Networks and Systems book series (LNNS, volume 292)

## Abstract

People across the world are being more health conscious in their weight, having a healthier diet and avoid obesity. A system that estimates calories and nutrition in food which can be differentiated depending upon its used ingredients can be very useful. So, we propose a system of design and implementation of food calorie estimation system using ImageAI which can recognize the food and gives the list of ingredients and measure of calories before consuming. We propose estimation of category of food type simultaneously along with the calories from images of food by using ImageAI with RetinaNet feature extraction object detection model. The food image is being captured and segmented into food components and calories are calculated using nutritional fact tables. Food type is estimated in the first, then the ingredients are recognized and calories are integrated and calculated for entire food nutrition. By using this system, the user can keep a track on their health and eat food which contain the nutrients that are essential for the body.

## Keywords

# Sophisticated embedding of Artificial Intelligence Techniques in Biomedical Engineering

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## Abstract

Machine Learning can now be very popular in various types of healthcare sectors. It deals with both structured or unstructured medical data. Common AI techniques in which machine learning procedures are used for structured data are neural network and the classical support vector machine in addition to NLP (natural language processing) and modern deep learning is for data that is unstructured. Core disease areas where Artificial Intelligence technology have been used are cancer, cardiology and neurology. Expansion of pharmaceuticals using clinical trials always take more time sometimes even decades and very costly. Therefore, making the process faster and low-cost is the main objectives and Artificial Intelligence start-ups are directing for. Artificial intelligence thus has a wide application in the field of biomedical engineering. In this paper our main focus is to study the impact of AI in different healthcare sector. Artificial intelligence, acts an expert system that works on huge amount of data using computer system that imitate the decision-making ability of health expert.

**Keywords**—Surgical robots , EHR, Coronary heart disease, NLP, Clinical Trials.

## 1. Introduction

Artificial Intelligence technology have exposed massive opportunity in Medical healthcare system. The advantages AI has fuelling a lively discussion of whether Artificial Intelligence doctors shall in due course replace human doctors in near future. But it is very difficult to trust that human doctors will not be substituted by artificial intelligence machines in likely future, as Artificial Intelligence certainly provide assistance toward physicians so that they make improved clinical decisions. Artificial Intelligencemight also or even substitute human decision in certain practical areas of health care like radiology[3]. The growth of Artificial Intelligence in healthcare data and fast expansion of dissimilar big data analytic methods has made possible fruitful applications of AI in Medical healthcare[7]. Drawing out medical records is the major application of artificial intelligence in medicine. Gathering, storing, normalizing and finding its family is the first step in revolutionizing presented healthcare systems[6].

Focused by applicable clinical questions, significant AI techniques can solve clinically applicable information hidden in the enormous amount of data, which then points to assist medical decision making[1][2]. This paper outlines the present status of Artificial Intelligence in healthcare, as well as its future. Firstly, a brief review of four main significant aspects from medical agents views points:

### 1.1 Motivation behind using Artificial Intelligence in healthcare Industry

- Analysis of different diseases using existing database
- Managing chronic diseases to generate proven results
- Artificial Intelligence are used for drug discovery

Numbers of reward of Artificial Intelligence have now been widely found in the medical journalism. Artificial Intelligence can use polished algorithms to 'learn' different features from a large amount of clinical data, and then use the found understandings to help medical practice. Learning and self modification abilities are also equipped to get better precision based on comment. An Artificial Intelligence

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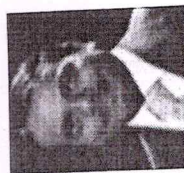


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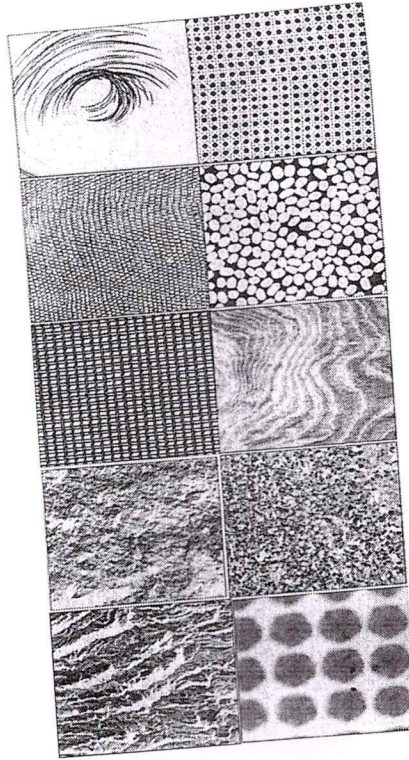
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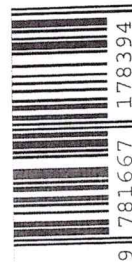


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# Independent Women Being Compassionate Towards Corporate Commitment

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**Abstract:** Increasing in opportunities for women has changed the world which fills workspace culture gap in several sectors. Empowering women is one of the most pressing criteria for economic and social needs of a nation. The study focuses on contributions of women in corporate sector and sustaining active engagement in their personal life. Women disruptions to employment, stimulating deeper thinking with targeted business actions and self-management brings the most possible change in society. The findings show that women have developed considerable effect on the academic front whereas ever-increasing work pressure is urging working women to spend less time for themselves. Women contributions in corporate sector is extremely important for prosperity and success of nations that make an incredible progress across the globe. The methods suggest that creating an envisioned process to improve gender parity in society by capitalizing human talents will make a better work place for women. This dearth of women in corporate boardrooms definitely steers the accountability. Results show that the presence of women in management positively with commitment and leadership affects significant untapped source of executive talent leading the way in decision and policy making.

## 1. Introduction:

Numerous sociologists set about from the theory that human behaviour is mostly aimed and driven by culture, such is the learned fashion caused by members of society. Morals, values and actions are culturally bound and socially imparted. From this point of view, gender roles are produced out of culture instead of biology. The status of women and their roles have been subject to effective changes over the past few millennia. From equal status with men of ancient periods through the minimal points of the medieval period, to the advocacy of equal rights by large number of reformers, the history of working women have been momentous. The growth of employment opportunities appears to be higher for women when compared with men. Large number of public bodies have become more vocal which supports the increased involvement and participation of women in high positions such as leaders, managers in corporate world. Status of working women can be defined as socio-economic freedom and equality enjoyed by them. They are

recognised for their value at work place, engaged in a wide range of activities in addition to routine domestic work. Most of the women in urban areas contribute working in one form or the other. Though the cultural restrictions that women face are changing, they are not still free from men in formal economic participation. However, women today continue to face discrimination and other social challenges and are often victims of abuse and violent crime. The present study focuses on corporate women working in a wider perspective and their representation as a leader and responsible performer having work-life balance, taking productive decisions and making constructive policies, contributing for the growth of a nation.

## 2. Literature Review

Many studies have explored to identify women leaders and challenges faced in corporate sector. Their 'lived experiences' [1] such as harmonious relations, excluded opportunities to work in key roles, organisational support, etc., were highlighted.

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Puja Sahay Prasad

## Biometric template protection scheme-cancelable biometrics

Authors Vinit Kumar Gunjan, Puja S Prasad, Saurabh Mukherjee

Publication date 2020

Book ICCCE 2019

Pages 405-411

Publisher Springer, Singapore

Description Biometric template is actually digital representation of the biometric features that are extracted by applying different algorithms on the captured images of different types of biometric modalities. This digital information is stored in a biometric database for identification and authentication purposes. The objective of this paper discussed about cancelable Biometric template protection scheme. The idea behind cancelable biometrics is intentionally and repeatedly alteration of biometric features in such a way so that the data or biometric features will be protected.

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Puja Sahay Prasad

# Applications of Artificial Intelligence in Biomedical Engineering

Authors Puja Sahay Prasad, Vinit Kumar Gunjan, Rashmi Pathak, Saurabh Mukherjee

Publication date 2021/3/29

Book Handbook of Artificial Intelligence in Biomedical Engineering

Pages 125-145

Publisher Apple Academic Press

Description Artificial intelligence (AI) can now be very popular in various healthcare sectors. It deals with both structured and unstructured medical data. Common AI techniques in which machine learning procedures are used for structured data are neural network and the classical support vector machine (SVM) as well as natural language processing and modern deep learning for unstructured data. The main disease areas where AI tools have been used are cancer, cardiology, and neurology. The development of pharmaceuticals via clinical trials can take more time even decades and very costly. Therefore, making the process quicker and inexpensive is the main objective of AI start-ups. AI thus has a wide application in the field of biomedical engineering. AI can also help in carrying out repetitive tasks, which are time-consuming processes. Tasks such as computed tomography (CT) scans, X-ray scans, analyzing different tests ...

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**ICT with Intelligent Applications** pp 213–218

## Weight-Based Binary Channel Coding —A Machine Learning Approach

Piratla Srihari

Conference paper | First Online: 06 December 2021

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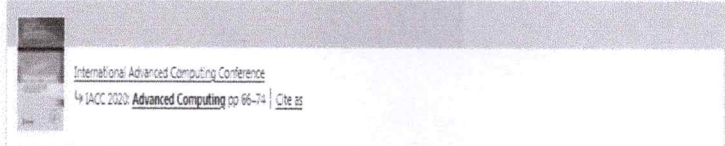
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### Abstract

Channel encoding provides the ability of having a reliable error-free reception in connection with digital data transmission. The channel noise affects some of the information bits transmitted (i.e., the received and the transmitted will not be the same), and such affected bits are referred to as errors in the received. Channel coding attends such influences of additive channel noise on the information transmitted, through the redundancy provided for the information prior to transmission. This redundancy provides overheads for transmission, and these are responsible for error-

  
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# A Compact Shape Descriptor Using Empirical Mode Decomposition to Detect Malignancy in Breast Tumour

Sreerama Paramashram, Manjula Sri Rayudu & Pujia S. Prasad

Conference paper | First Online: 11 February 2021

702 Accesses

Part of the Communications in Computer and Information Science book series (CCIS, volume 1367)

## Abstract

Breast cancer is the most common cancer in India and the world. Mammogram helps the radiologists to detect abnormalities in breast. Analysis of the lesions on breast helps doctors in the detection of cancer in early stages. Lesion contours of breast are characterized by their shape. Malignant lesion contours have speculated and ill-defined shapes and benign have circular and lobulated shape. In the present work, we proposed a method to classify breast contours into benign/malignant using empirical mode decomposition (EMD) technique. Initially, the two-dimension contours of breast lesions are compacted into 1D signature. Further, 1D signatures of lesions are decomposed into intrinsic mode functions (IMFs) by the EMD algorithm and statistical based features are calculated from these IMFs. This parameters form a input feature vector which are further fed to classifier.

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# Selective Search Segmentation based Text Detection from natural images

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**Abstract**— Detecting and recognizing text from natural scenes has societal impact applications like wearable device for visually impaired persons, voice road signals for drivers (speed limit, school ahead etc.), number plate recognition etc. The present work shows fast segmentation with Resnet based approach for detection of text from any image. CPU with NVIDIA GeForce 2060 GPU is used for training a convolution neural network for detection text from image. ICDAR 2015 data set is used for training purpose.

**Index Terms**—Convolutional neural network, deep neural network,

## I. INTRODUCTION

Optimum character recognition (OCR) can detect text from a white background image. But if image is natural scene then detection of text from image requires training of convolutional neural network architecture. Initial approach for the same uses sliding window technique where two or three windows of different size slides over the image. These sliding windows are then used to train convolutional neural network architecture to detect the exact boundary box around the text. But these approaches suffer high computation as requires sliding of different size windows over the image again and again. To resolve this issue segmentation approach is proposed by researchers in [1] to split the image into segments of different sizes based on shapes, texture, color in the image. These segments are then can be used by CNN architecture for getting boundary boxes around the text in the image.

Once the text is detected LSTM and CNN architecture-based OCR can be trained for recognition of detected text. The recurrent neural network-based architecture can also be used for recognition of text but it will not be able predict incomplete or missed character text but LSTM based OCR gives better performance at the cost of complex architecture.

The recognized text can be converted to voice signals by using text to voice in python that can convert text to voice

signals. This complete system will give the text output in the form of voice signal.

Whenever a region based convolutional neural network (RCNN) is used for object detection and annotation, max min suppression is the common technique used for converting number of boundary boxes into a single boundary box. But when text is the object to be detected and annotated direct max min suppression was not sufficient so here first all subset boundary boxes are suppressed then max min suppression is applied for boundary box detection around the text.

After reviewing different available data sets for text detection and recognition like Natural environment OCR (NEOCR) data set, COCO data set etc, ICDAR 2014 data set consisting of 229 train images and 233 test images with text file has been used as data set for training and testing of the defined network.

## II. REGIONAL CONVOLUTIONAL NEURAL NETWORK

The basic region based convolutional neural network uses segmentation approach (usually selective search segmentation) to generate proposed regions of different shapes and scales.

The label is provided to these segments using ground truth available. This process will generate training data set for the model as summarized in Fig. 1. Once the text boundaries are detected, text can be recognized using any basic OCR technique. During inference selective search is applied again for the new image. The generated regions are then given to a trained CNN architecture to detect the text existence in that region. The boundary boxes are received around the text detected regions.

There are various proposed ways to get the image segments [3],[4]. One of the basic approach in RCNN is selective search segmentation based approach. The other methods to generate segments of various aspect ratios is based

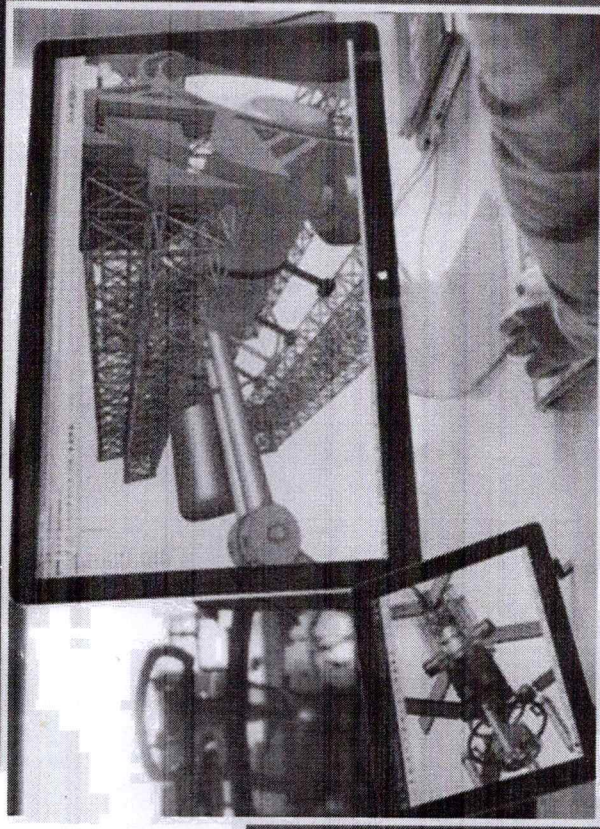




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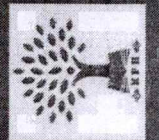
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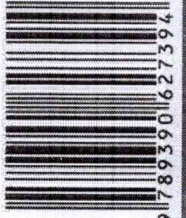
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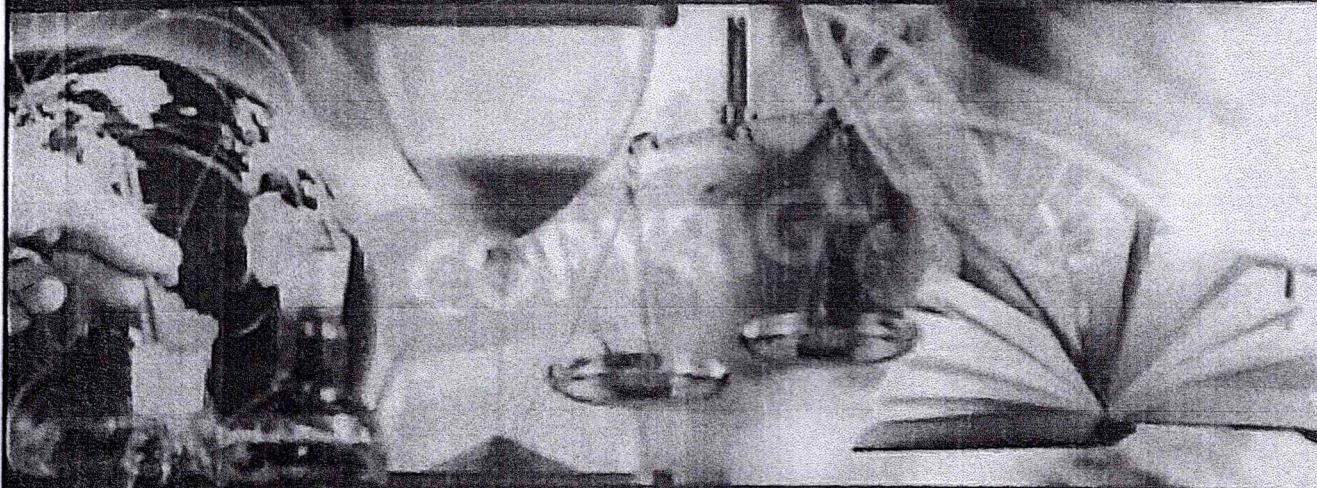
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