**HTML Code Generation From**

**Mock-up Images using**

**ML Techniques**

**PROJECT SYNOPSIS**

**BACHELOR OF TECHNOLOGY**

Computer Science And Technology

SUBMITTED BY

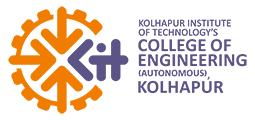
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# Abstract:

*As a first step of designing of website is start to  built the mock-up images for the particular web pages by  operated with the hands or using mock-up developer tools.  It is efficiently used for the developer to transferring web  pages mock-up to the coding. It’s generating the proposed  system to creating the wireframe to the layout interfaces  there are two techniques mostly used first is computer  vision and second is deep systematic analysis. The  automatic code generation is time reducing and cost  effective. We have design structured an outline the design.*

Nowadays, the internet is the most important in our  day to day life. Websites are presents in every  fields. The design cycle for a website opening due to  creating mock-up for separate webpage further  away drawing by hand or by drawing in paint  designs and intensive mock-up formation  apparatus. The mock-up images were then  transformed to HTML by software engineer. This  proceeding is recast extra instant as far as the  wanted template is not get. Our main target is to  equip html code out of hand drawn images. We use  convolution neural network, computer vision  technique and also deep learning was used for our  proposed system. In today’s world websites review  the institution, hotels, business, people, etc.

Websites are use in each and every factor. From education to knowledge, from training to social  work. At the front end of every site that concert  with the user. It is actual relevant to give a surface a  certain attraction in the user, it is very easy to use  and it has sufficing advanced attribute. In other  way, creating webpage which gives active respond  expertly for this it required a very tiring pathway.  In the developing of webpage, many software  engineering developer are working together to  designing the front view of the webpage.

 Software  designer built code to design the webpage basis on the draft. The resulting webpage can convert  depend on feedback received by the as in user. For the elements built the code with same feature with  page format converting instant turn into the steps  difficult. This emerges the need for expanding more  improved feature in a webpage format. The  proposal of structured the webpage by crating  automatic code is very interesting as a research subject. Generation of automatic webpage minimize  coding instant, steps price as well as resource. So  by this way thanking to the speedy pattern steps,  the final website is create in a very less time period.  In our survey, methods were used for automatically  developing the hand drawn images by generating  code for it. It’s aim to observe the factor create the  hand drawing by making encrypt the system in the  way of the webpage format.

# Motivation:

Our main aim is to convert the hand drawn mock ups which contains textbox, buttons, picture into  the HTML code to make a website template or front  end of our websites according to hand-drawn  mock-up which is conceptual drawing. In order to  convert this hand –drawn image into the HTML  code to frontend template we used computer vision  technique CNN model, object recognition, cropping  etc. The author work on object detection algorithm  to detect the component from the hand-drawn  image. The author work on object cropping  algorithm to crop the object like button, textbox,  dropdown etc. The author works on object  reorganization algorithm by using CNN model to  train our purposed system by using data set we  tested it on IOS platform. It work successfully &  result have been obtained. The author work on  HTML builder algorithm which convert the  detected object using CNN model by object  reorganization algorithm to the HTML code

Literature review:

Converting Web pages mockups to code is a task that developers typically perform. Due to the time required to accomplish this task, the time available to devote to application logic is reduced. So, the main goal of the present work was to develop deep learning models to automatically convert mockups of Web graphical interfaces into HTML, CSS and Bootstrap code. The trained model must be deployed as a Web application. Two deep learning models were built, resulting from two different approaches to integrate in the Web application. The first approach uses a hybrid architecture with a convolutional neuronal network (CNN) and two recurrent networks (RNNs), following the encoder-decoder architecture commonly adopted in image captioning.

**Aim of Project**

Our aim is to design and Implement a Wb Page by Developing Html code from Mock-up images using various machine learning techniques.

**Problem formulation/Objectives**

Usually, to write the code for applications, we write lots and lots of code and end up exhausted. And also, if there is any requirement from client again whole code should be corrected. It is completely waste of time and lack of proper information. To avoid such conflicts, a proper site is being created, the main disadvantages of existing systems are,

•Lack of correct information.

•It takes huge time

.•Less accurate .

The Automatic html code generation from mock-up images using Machine Learning is being created to overcome the disadvantages of existing system like less accuracy, lack of information, etc. The advantages of proposed system are

•Time saving.

•It offers better security

•It can save network bandwidth.

•Leads to lower operational costs.

•IT team can manage and control thedevices.

•Accurate information.

3.SystemComponents

There are four system components or modules in this project. The four system modules are,1.Upload data setsfiles2.Object Detection andCropping3.ObjectRecognition4.HTMLBuilder1.UPLOAD DATA SETS FILES Admins are allowed to upload the CSV files with the tags given. Once the file is uploaded, In SQL Alchemy ORM, the Object Relational Mapper is introduced and fully described. If you want to work with higher-level SQL which is constructed automatically Create Engine stored the Data Base. we have to upload mockup images. These images are stored in database.2.OBJECT DETECTION ANDCROPPING After reading the input file, it is converted to gray scale format. Then, Gaussian Blur was applied 2 times to them with 3x3 rectangle kernel. After the threshold process was carried out, rectangle was drawn by applying the contour detection algorithm to determine the objects by applying morphological transformations. In this way, the components in the input image have been detected. The detected components were cropped to be transferred to the CNN model.In the stages of morphological transformations, 8 iteration dilation was performed with 4x4 rectangle kernel. Then erosion process wasapplied with 3x3 ellipse kernel for 4 iterations and dilation process was performed with 1x10 rectangle shaped kernel for 2 iterations. Finally, a 10x1 rectangle shaped kernel was used for dilation process. The input file is the image that is uploaded, and it is read and converted to grayscale format. The noise is then reduced using the Gaussian function. They are transformed into morphological changes. Cropped and sent to the CNN model are the discovered components. At this stage, morphological alterations such as dilatation and erosion are carried out.3.OBJECTRECOGNITION:The model was transferred by using the elements of components in our component dataset. Dataset be made up of four distinct kind of component which is textbox, checkbox, buttons, dropdown and etc. Cropped components reorganization process are done by given cropped component to the CNN model. CNN model has several layers for filtering such as convolution layers with 4\*4 kernel & then there is max pooling process with 2\*2 kernels which is used for the extraction after that factorization i

s done by using BILSTM layer for the correlation of extraction. After that pool full connected layer and last one is the dropout layer, all the layers working together to train the model. This whole process is done by directly importing keras library in our code.4.HTMLBUILDER:After the reorganizationprocess the recognized component were converted successfully to the HTML code by using the Bootstrap framework. This all process done by using help of the coordinate from the output of the counter finding algorithm. In this HTML builder algorithm first ofall we create the template for the header & footer of the websites after that we recognize how many components are there in one row with the co-ordinate of component. Then we labelled the code of that each component for their template code after that the body section HTML code was generated. Lastly header & footer were combined so that the HTML code is generated.

**Methodology/ Planning of work:**

In this study there are four steps carried out. First  one is object detection process is done on input.  After that this identified components are cropped & this all process we are done by using the tensor  flow libraries. And at last output from this process  is converted into HTML code by using HTML builder algorithm.

**1) Object detection:**

Afterwards getting input image file in png format  from user input image converted into the array  format. The 3\*3 rectangle kernel is created outside  the object to detect it by applying counter detection  algorithm by this way components are detected.  Afterwards the catched elements are cropped and  then it transferred to next stage which is the  convolution neural network model. [7]

**2)Object Recognition:**

The model was transferred by using the elements of  components in our component dataset. Dataset be  made up of four distinct kind of component which  is textbox, checkbox, buttons, dropdown and etc.  Cropped components reorganization process are  done by given cropped component to the CNN  model. [9]

**3) CNN model:**

CNN model have several layer for filtering such as  convolution layers with 4\*4 kernel & then there is  max pooling process with 2\*2 kernels which is used  for the extraction after that factorization is done by  using BILSTM layer for the correlation of  extraction. After that pool full connected layer and  last one is the dropout layer, all the layers working  together to train the model. This whole process is  done by directly importing keras library in our  code.[7]

**4) HTML Builder:**

After the reorganization process the recognized  component were converted successfully to the  HTML code by using the Bootstrap framework. This  all process done by using help of the coordinate  from the output of the counter finding algorithm. In  this HTML builder algorithm first of all we create component. Then we labelled the code of that each  component for their template code after that the  body section HTML code was generated. Lastly header & footer were combined so that the HTML  code is generated.

# HW/SW requirements:

The functional requirements are

•Graphical User interface with the User.

•Upload mock-up image: Images are uploaded to the application.

•Verification: Verifying whether correct image is uploaded or not Non-functional requirements for this project are:

•Precision: Precision is used in implementing processes and project activities. Precision is a goal that most organizations want to achieve.

•Accuracy: Accuracy is defined as the closeness of the measured value to a known standard, precision is defined as the measure of exactness.

•Performance: Performance is defined as how quickly does the system respond to users’ actions, or how long does a user wait for a specific operation to happen.

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