```
Index.html
<html>
<head>
<title>Digit Recognition Website</title>
<meta name="viewport" content="width=device-width">
<!-- GoogleFont -->
 <link href="https://fonts.googleapis.com/css2?family=Prompt:wght@600&display=swap"</pre>
rel="stylesheet">
k href="https://fonts.googleapis.com/css2?family=Varela+Round&display=swap"
rel="stylesheet">
k
href="https://fonts.googleapis.com/css2?family=Source+Code+Pro:wght@500&display=swap"
rel="stylesheet">
k
href="https://fonts.googleapis.com/css?family=Calistoga|Josefin+Sans:400,700|Pacifico&display=
swap" rel="stylesheet">
<!-- bootstrap -->
k rel="stylesheet"
href="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/css/bootstrap.min.css"
integrity="sha384-
ggOyR0iXCbMQv3Xipma34MD+dH/1fQ784/j6cY/iJTQUOhcWr7x9JvoRxT2MZw1T"
crossorigin="anonymous">
rel="stylesheet" type= "text/css" href= "{{ url_for('static',filename='css/style.css') }}">
<!-- fontawesome -->
 <script src="https://kit.fontawesome.com/b3aed9cb07.js" crossorigin="anonymous"></script>
 <script src="https://code.jquery.com/jquery-3.3.1.slim.min.js" integrity="sha384-</pre>
q8i/X+965DzO0rT7abK41JStQIAqVgRVzpbzo5smXKp4YfRvH+8abtTE1Pi6jizo"
crossorigin="anonymous"></script>
 <script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.14.7/umd/popper.min.js"</pre>
integrity="sha384-
```

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UO2eT0CpHqdSJQ6hJty5KVphtPhzWj9WO1clHTMGa3JDZwrnQq4sF86dlHNDz0W1"
crossorigin="anonymous"></script>
<script src="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/js/bootstrap.min.js"</pre>
integrity="sha384-JjSmVgyd0p3pXB1rRibZUAYoIIy6OrQ6VrjIEaFf/nJGzIxFDsf4x0xIM+B07jRM"
crossorigin="anonymous"></script>
 <script src="https://cdn.jsdelivr.net/npm/@tensorflow/tfjs@latest"></script>
</head>
<script>
function preview() {
 frame.src=URL.createObjectURL(event.target.files[0]);
}
  $(document).ready(function() {
     $('#clear_button').on('click', function() {
       $('#image').val('');
       $('#frame').attr('src',"");
      });
    });
</script>
<style>
.header {
               position: relative;
                      top:0;
                       margin:0px;
                      z-index: 1;
                       left: 0px;
                       right: 0px;
```

```
position: fixed;
                       background-color: rgba(100, 100, 100, 0.5);
                       color: white;
                       box-shadow: 0px 8px 4px grey;
                       overflow: hidden;
                       padding-left:20px;
                       font-family: 'Josefin Sans';
                       font-size: 2vw;
                       width: 100%;
                       height:8%;
                       text-align: center;
               }
               .topnav {
overflow: hidden;
background-color: #FCAD98;
}
body {
background-image: url('static/images/img2.jpg');
background-repeat: no-repeat;
background-attachment: fixed;
background-size: cover;
}
.topnav-right a {
```

```
float: left;
color: black;
text-align: center;
padding: 14px 16px;
text-decoration: none;
font-size: 18px;
}
.topnav-right a:hover {
background-color: #FCAD98;
color: black;
}
.topnav-right a.active {
background-color: #FCAD98;
color: white;
}
.topnav-right {
float: right;
padding-right:100px;
}
body {
background-color:;
background-repeat: no-repeat;
```

```
background-size:cover;
  background-size: cover;
background-position: 0px 0px;
}
span.psw {
float: right;
padding-top: 16px;
font-size:5-px
}
/* Change styles for span and cancel button on extra small screens */
@media screen and (max-width: 300px) {
span.psw {
  display: block;
  float: none;
}
/* Caption text */
.text {
color: #f2f2f2;
font-size: 15px;
padding: 8px 12px;
position: absolute;
bottom: 8px;
width: 100%;
text-align: center;
}
```

```
/* The dots/bullets/indicators */
.dot {
height: 15px;
width: 15px;
margin: 0 2px;
background-color: #bbb;
border-radius: 50%;
display: inline-block;
transition: background-color 0.6s ease;
}
.active {
background-color: #FCAD98;
}
/* Fading animation */
.fade {
-webkit-animation-name: fade;
-webkit-animation-duration: 1.5s;
animation-name: fade;
animation-duration: 1.5s;
}
@-webkit-keyframes fade {
from {opacity: .4}
to {opacity: 1}
}
```

```
@keyframes fade {
from {opacity: .4}
to {opacity: 1}
}
/* On smaller screens, decrease text size */
@media only screen and (max-width: 300px) {
.text {font-size: 11px}
}
@import url("https://fonts.googleapis.com/css?family=Montserrat&display=swap");
* {
padding: 0;
margin: 0;
}
body {
height: 100vh;
display: flex;
flex-direction: column;
justify-content: center;
align-items: center;
}
```

```
h1 {
 font-family: "Montserrat Medium";
 max-width: 90ch;
 text-align: center;
 transform: scale(0.94);
 animation: scale 3s forwards cubic-bezier(0.5, 1, 0.89, 1);
}
@keyframes scale {
 100% {
  transform: scale(1);
 }
}
span {
 display: inline-block;
 opacity: 0;
 filter: blur(4px);
}
span:nth-child(1) {
 animation: fade-in 1s 0.1s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
span:nth-child(2) {
 animation: fade-in 0.8s 0.2s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
```

```
span:nth-child(3) {
 animation: fade-in 0.8s 0.3s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
span:nth-child(4) {
 animation: fade-in 0.8s 0.4s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
span:nth-child(5) {
 animation: fade-in 0.8s 0.5s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
span:nth-child(6) {
 animation: fade-in 0.8s 0.6s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
span:nth-child(7) {
 animation: fade-in 0.8s 0.7s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
span:nth-child(8) {
 animation: fade-in 0.8s 0.8s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
span:nth-child(9) {
 animation: fade-in 0.8s 0.9s forwards cubic-bezier(0.11, 0, 0.5, 0);
```

```
}
span:nth-child(10) {
 animation: fade-in 0.8s 1s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
span:nth-child(11) {
 animation: fade-in 0.8s 1.1s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
span:nth-child(12) {
 animation: fade-in 0.8s 1.2s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
span:nth-child(13) {
 animation: fade-in 0.8s 1.3s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
span:nth-child(14) {
 animation: fade-in 0.8s 1.4s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
span:nth-child(15) {
 animation: fade-in 0.8s 1.5s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
span:nth-child(16) {
```

```
animation: fade-in 0.8s 1.6s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
span:nth-child(17) {
 animation: fade-in 0.8s 1.7s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
span:nth-child(18) {
 animation: fade-in 0.8s 1.8s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
span:nth-child(19) {
 animation: fade-in 0.8s 1.9s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
span:nth-child(20) {
 animation: fade-in 0.8s 2.0s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
span:nth-child(21) {
 animation: fade-in 0.8s 2.1s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
span:nth-child(22) {
 animation: fade-in 0.8s 2.2s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
span:nth-child(23) {
 animation: fade-in 0.8s 2.3s forwards cubic-bezier(0.11, 0, 0.5, 0);
}span:nth-child(24) {
 animation: fade-in 0.8s 2.4s forwards cubic-bezier(0.11, 0, 0.5, 0);
}span:nth-child(25) {
```

```
animation: fade-in 0.8s 2.5s forwards cubic-bezier(0.11, 0, 0.5, 0);
}span:nth-child(26) {
 animation: fade-in 0.8s 2.6s forwards cubic-bezier(0.11, 0, 0.5, 0);
}span:nth-child(27) {
animation: fade-in 0.8s 2.7s forwards cubic-bezier(0.11, 0, 0.5, 0);
}span:nth-child(28) {
animation: fade-in 0.8s 2.8s forwards cubic-bezier(0.11, 0, 0.5, 0);
}
@keyframes fade-in {
 100% {
  opacity: 1;
 filter: blur(0);
}
}
 </style>
<body >
</style>
<div style="width:50%;float:left;font-size:2vw;text-align:center;color:mediumSeaGreen; padding-</pre>
top:1%;padding-left:5%;"><b>NOVEL HANDWRITTEN DIGIT RECOGNITION<b></div>
<div class="topnav-right"style="padding-top:0.5%;">
```

```
<h1 style="color:black">
 <b><span> The handwritten digit recognition
is the </span> <span> ability of computers to recognize human handwritten digits. </span>
<span>
It is a hard task for the machine </span > <span> because handwritten digits are not
perfect</span> <span>and can be made with many different flavors.
 </span> <span> There are a number of ways and algorithms to recognize handwritten digits,
</span> <span> including Deep Learning/CNN, SVM, </span > <span>
Gaussian Naive Bayes, KNN, Decision Trees, Random Forests, etc.</span>
<span> MNIST is a dataset consisting of 70,000 black-and-white</span> <span> images of
handwritten digits.</span> </b>
</h1>
 <section id="content">
    <div class="leftside">
    <form action="/predict" method="POST" enctype="multipart/form-data">
    <label>Select a image:</label>
    <input id="image" type="file" name="image" accept="image/png, image/jpeg"
onchange="preview()"><br><br>
    <img id="frame" src="" width="100px" height="100px"/>
    <div class="buttons_div">
      <button type="submit" class="btn btn-dark" id="predict_button">Predict</button>
      <button type="button" class="btn btn-dark" id="clear_button">&nbsp Clear
&nbsp</button>
```

```
</div>
    </form>
    </div>
</section>
</body>
</html>
Predict.html
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Prediction</title>
</head>
<style>
  body {
background-image: url('static/images/img1.jpg');
background-repeat: no-repeat;
background-attachment: fixed;
background-size: cover;
}
```

```
#rectangle{
  width:400px;
  height:150px;
  background-color: #5796a5;
  border-radius: 25px;
  position:absolute;
  top:25%;
  left:50%;
  transform:translate(-50%,-50%);
 }
  #ans{
text-align: center;
font-size: 40px;
margin: 0 auto;
padding: 3% 5%;
padding-top: 15%;
color: white;
 }
</style>
<body>
  <div id="rectangle">
    <h1 id="ans">Predicted Number : {{num}}</h1>
  </div>
</body>
```

Output screenshot

NOVEL HANDWRITTEN DIGIT RECOGNITION

The handwritten digit recognition is the ability of computers to recognize human handwritten digits. It is a hard task for the machine because handwritten digits are not perfect and can be made with many different flavors. There are a number of ways and algorithms to recognize handwritten digits, including Deep Learning/CNN, SVM, Gaussian Naive Bayes, KNN, Decision Trees, Random Forests, etc. MNIST is a dataset consisting of 70,000 black-and-white images of









