1. INTRODUCTION:

1.1 OVERVIEW :

The main objective of this is to develop methods for detecting icebergs using satellite radar data and high spatial resolution images in the visible spectral range. The methods of satellite monitoring of dangerous ice formations, like icebergs in the Arctic seas represent a threat to the safety of navigation and economic activity on the Arctic shelf.

1.2 PURPOSE :

To build an accurate model for the detection of icebergs and successfully using the algorithm in ship navigation systems for avoiding the icebergs and save lives and billions of dollars.

2. Literature Survey

2.1 Existing Problem:

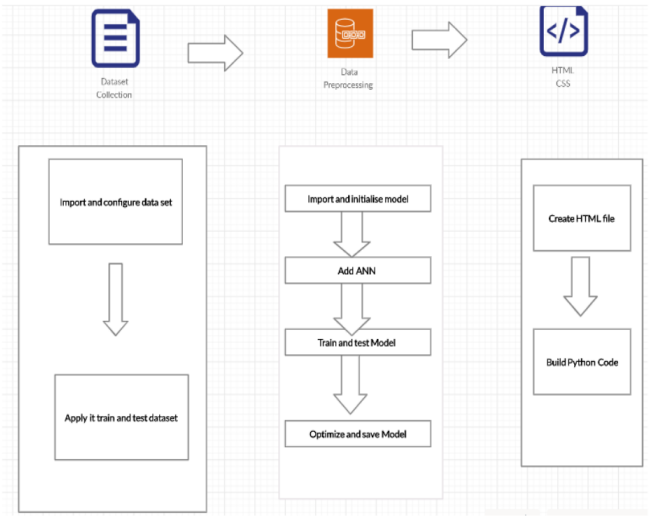
Build an algorithm to automatically identify whether a remotely sensed target is an iceberg or not. Often times an iceberg is wrongly classified as a ship. The algorithm had to be extremely accurate because lives and billions of dollars in energy infrastructure are at stake.

2.2 Proposed Solution:

The developed method of iceberg detection is based on statistical criteria for finding gradient zones in the analysis of two-dimensional fields of satellite images. The approaches proposed to detect icebergs from satellite data allow improving the quality and efficiency of service for a wide number of users with ensuring the efficiency and safety of Arctic navigation and activities on the Arctic shelf.

3. THEORETICAL ANALYSIS :

3.1 Block Diagram :



3.2 Hardware / Software Designing:

1. Strategy: Using ANN based neural networks Algorithm to predict the CCPP electrical power output prediction
2. Dataset Creation :Data Collection
3. Data Preprocessing:
4. Importing Data Set

Evaluating Any Null Values

1. Training and Testing Dataset by applying Multi linear regression method.
2. Model Building :

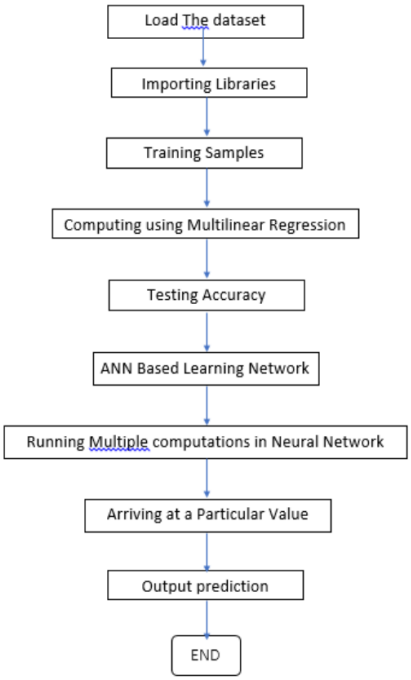
1. Import Model Building Libraries
2. Initializing the model
3. Loading Preprocessing Data
4. Adding ANN and Dense layer
5. Configure Learning Process
6. Train and Test Model
7. Optimize and save the Model

1. Application Building

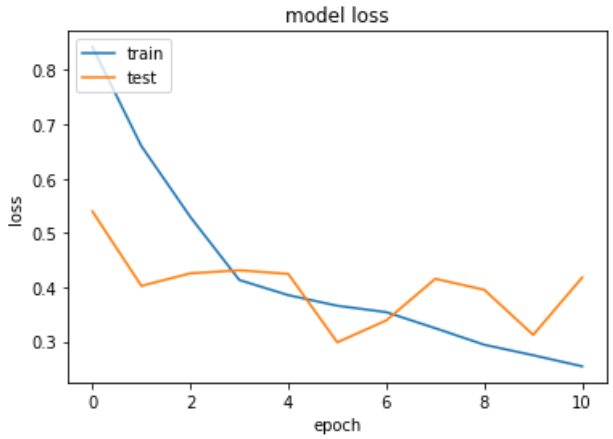
1. Create HTML file
2. Build Python Code

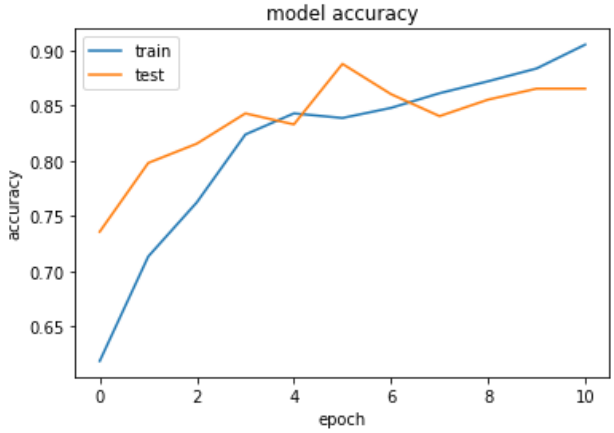
4.EXPERIMENTAL INVESTIGATION:

5.FLOWCHART :



6.RESULT :





Both the training as well as the test set loss values are converging quite well. Also the model is able to achieve training and test set accuracy of 90% and 85% respectively in just 10 epochs.

7.ADVANTAGES AND DISADVANTAGES:

8.APPLICATIONS:
Used in Ship Navigation Systems to feature to avoid crashing into icebergs and navigating a safe course through the oceans.

9.CONCLUSION:
I think this is one of the great examples where deep learning can be used to solve a challenging real-world problem. If we are able to detect and segment icebergs in an image, it would be of great help to the logistics and transportation team in northern countries like Sweden, Norway

and Canada. It could bring a whole new dimension of transport for container ships and vessels by tracking icebergs from satellite images and videos in real-time.

10. FUTURE SCOPE :

11. BIBLOGRAPHY:

Model Building
1. Dataset
2. Jupiter Notebook
Application Building
1. HTML file
2. CSS file
3. Flask
4. IBM Watson

A. SOURCE CODE:

HTML Code :

```
<!DOCTYPE html>
<html>
<head>
<title>Iceberg detection prediction</title>
<link href="https://cdn.bootcss.com/bootstrap/4.0.0/css/bootstrap.min.css"
rel="stylesheet">
<script
src="https://cdn.bootcss.com/popper.js/1.12.9/umd/popper.min.js"></script>
<script
src="https://cdn.bootcss.com/jquery/3.3.1/jquery.min.js"></script>
<script
src="https://cdn.bootcss.com/bootstrap/4.0.0/js/bootstrap.min.js"></script
>
<link rel="stylesheet" href="{{ url_for('static',
filename='css/style.css') }}" type= "text/css" >
</head>
<body>
<section class="zoom">
<img src="{{url_for('static', filename='iceberg1.png')}}"
id="layer2"/>
<img src="{{url_for('static', filename=' iceberg2.png')}}"
```

```
id="layer1"/>
<img src="{{url_for('static', filename=' iceberg3.png')}}" hspace="850"
id="text"/>
</section>
<section class="maincontent">
<p><strong>ABOUT:</strong></p>
<p><strong>The Ocean is filled with obstacles and contains Icebergs which are threatening to safety of the ship and its people. Especially in colder regions like the Arctic and Antarctic the detection of icebergs are very essential for navigating a safe passage through the ocean to avoid hitting an iceberg and is done through building image processing using satellite imagery and should be able to detect the difference between a iceberg and a ship.strong></p>
</section>
<script type="text/javascript">
var layer1 = document.getElementById('layer1')
scroll = window.pageYOffset;
document.addEventListener('scroll',
function (e){
var offset = window.pageYOffset;
scroll = offset;
layer1.style.width = (100 + scroll) + '%'
});

layer2 = document.getElementById('layer2')
scroll = window.pageYOffset;
document.addEventListener('scroll',
function (e){
var offset = window.pageYOffset;
scroll = offset;
layer2.style.width = (100 + scroll/5) + '%';
layer2.style.left = scroll/50 + '%';
});
</script>
</body>
</html>
```

CSS Code :

```
body{
background: #0d122a;
}
.zoom
```

```
{
width: 100%;
height: 1000px;
position: relative;
overflow: hidden;
background: url(659526.jpg);
background-size:cover;
}
.zoom:before
{
content: '';
position: absolute;
bottom: 0;
width: 100%;
height: 200px;
z-index: 1000;
background: linear-gradient(transparent, #000);
}
.zoom #layer1
{
position: absolute;
left: 40%;

width: 100%;
transform: translateX(-50%);
z-index: 10;
}
.zoom #layer2
{
position: absolute;
right: 0;
width: 100%;
z-index: 9;
}
.zoom #text
{
position: absolute;
margin-top: 300px;
right: 0;
width: 87%;
transform: translateX(50%);
```

```
}
.maincontent
{
padding: 100px;
box-sizing: border-box;
}
.maincontent p
{
color: #ffff;
font-size: 1.3em;
}
```