Alzheimer's Disease Detection

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Overview

- Business Understanding
- Data Understanding
- Modeling
- Model Evaluation
- Recommendations

Business Understanding

Problem

Alzheimer’s researchers in New york Alzheimer’s center are interested in **detecting Alzheimer's disease and finding ways to head off brain damage .**

Solution

Developing a **predictive classification model** that will **classify** a set of brain MRI Images in order to detect **Alzheimer's disease stages.**

Data Understanding

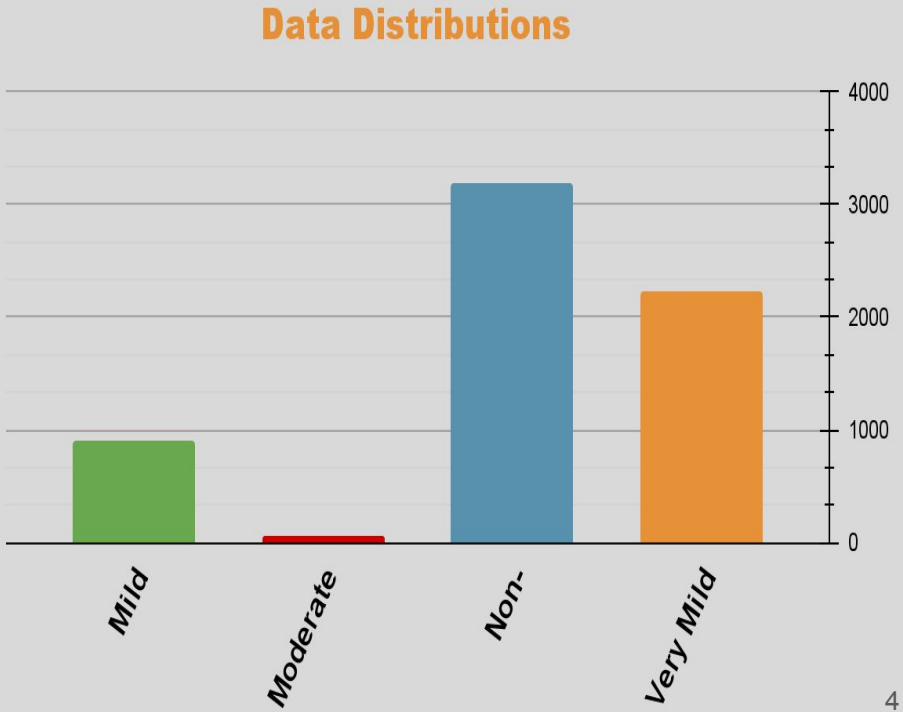
- The project is collected Alzheimer MRI dataset from Kaggle .
- Dataset consists of 6400 MRI images
- Divided into four classes :

  1-**Mild Demented** (896 images)

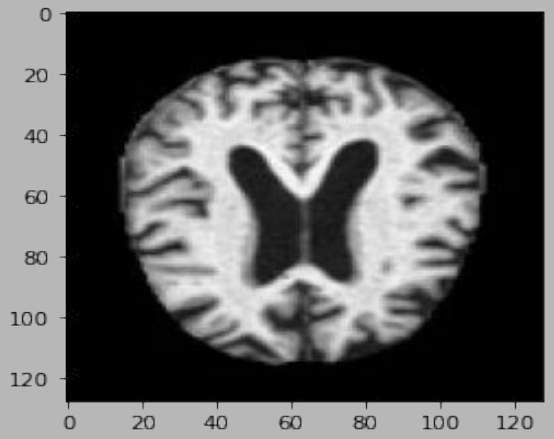
  2-**Moderate Demented** (64 images)

  3-**Non-Demented** (3200 images)

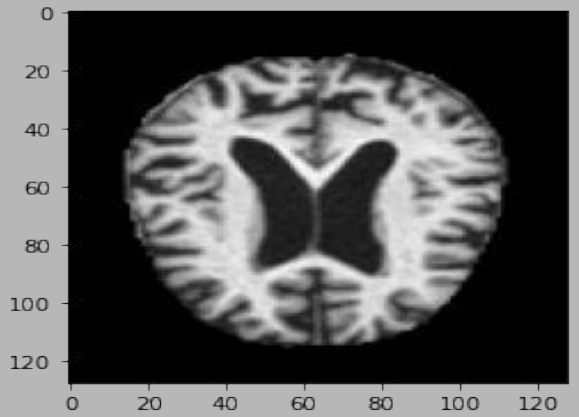
  4-**Very Mild Demented** (2240 images)



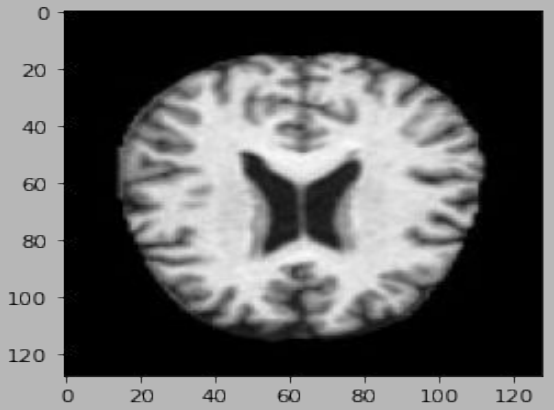
Brain MRI images



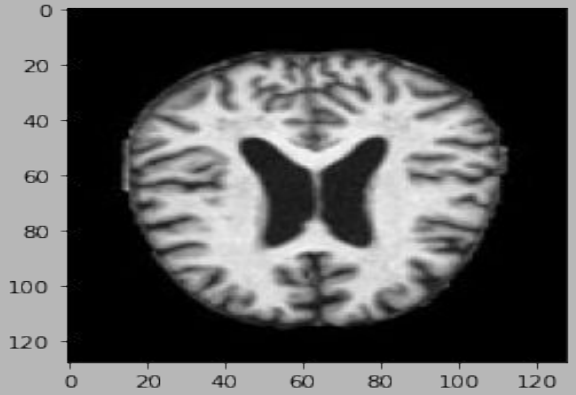
Mild Demented



Moderate Demented

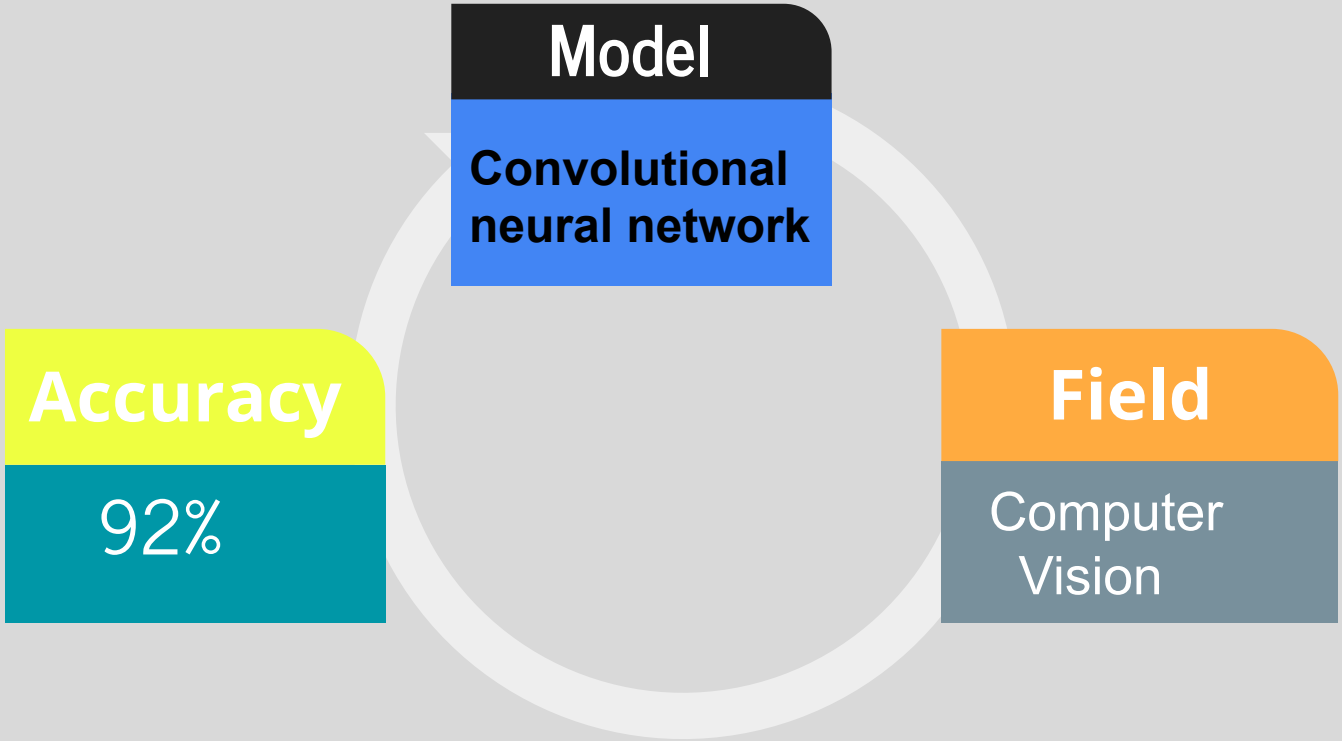


Non-Demented



Very Mild Demented

Modeling


Model
Convolutional neural network
Field
Computer Vision
Accuracy
92%

Evaluation

Metrics

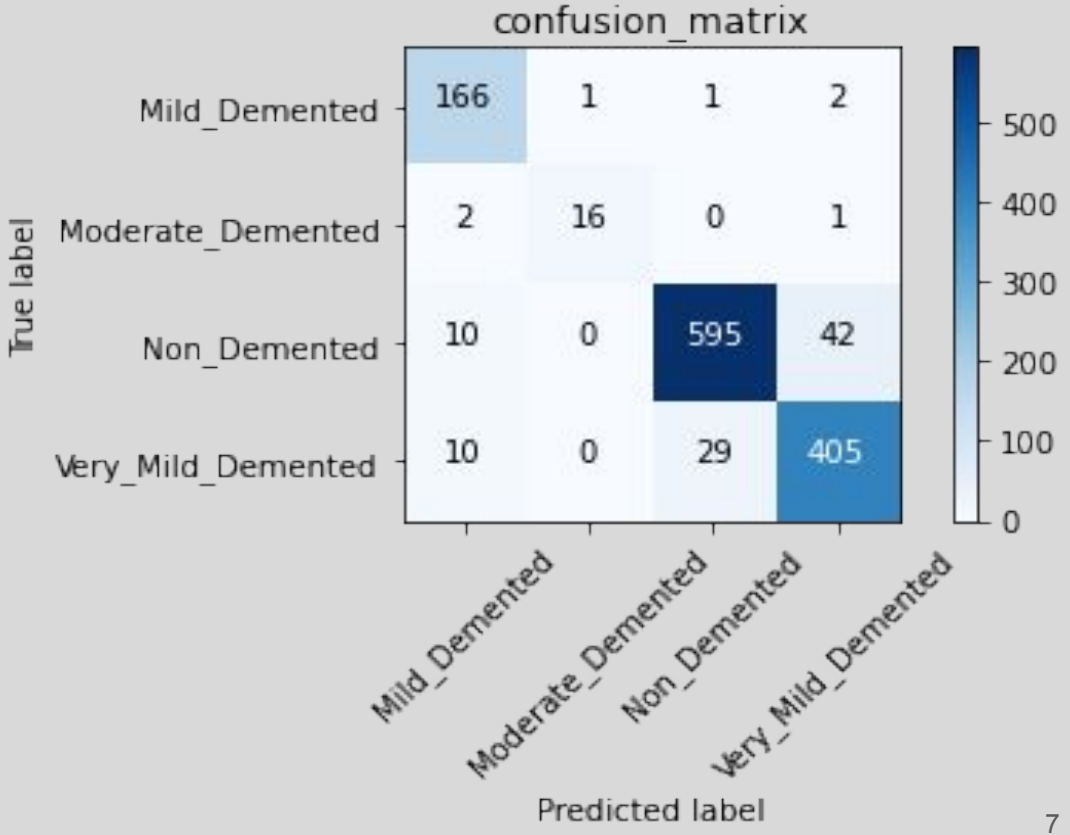
Recall score and Accuracy

Recall

Percent of the positive cases the model catches

Recall per class

98% class 0
84% class 1
92% class 2
91%. class 3



Recommendations

- Being aware of **Alzheimer's signs and symptoms** is essential for diagnosing the disease.
- Develop and maintain **routine procedures for checking brain health by making early brain screening.**
- Our trained model should be **used by entering the brain MRI images into the model as inputs, and the model will classify each image to the class that the image belongs to** it ,this process would save a lot of efforts and time.
- Publishing the **new research papers**, and keep investigating **new treatments**

THANKS!

Any questions?

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