Brain Tumor Classification

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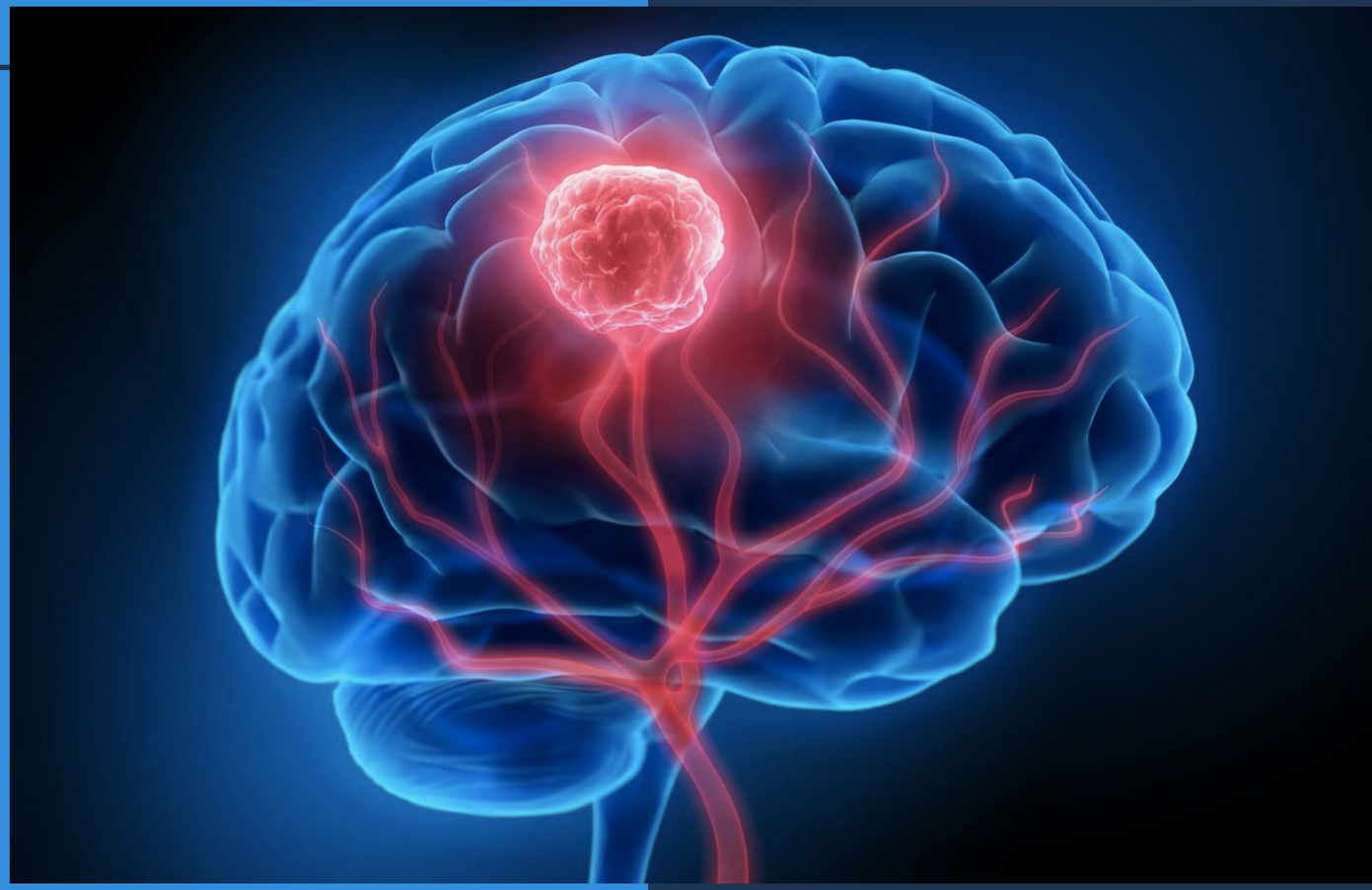
BACKGROUND

- Five-year survival rate any kind of Brain Tumor is 36%

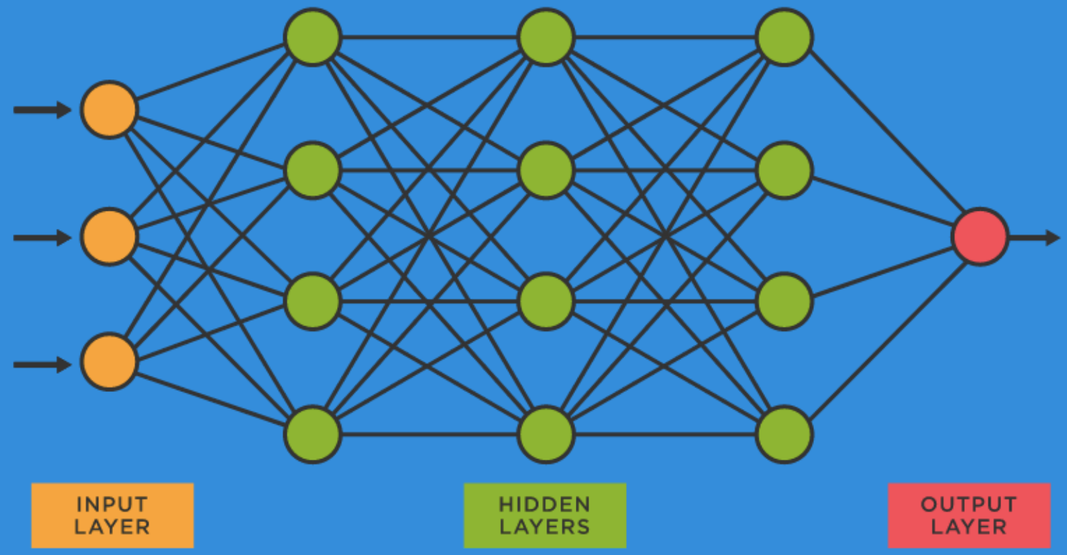
- Both benign and malignant tumors put pressure on the brain



AI CAN HELP

- Machine learning models are better at detecting and diagnosing brain tumors than humans

- Can pick up on subtle patterns not visible to the human eye

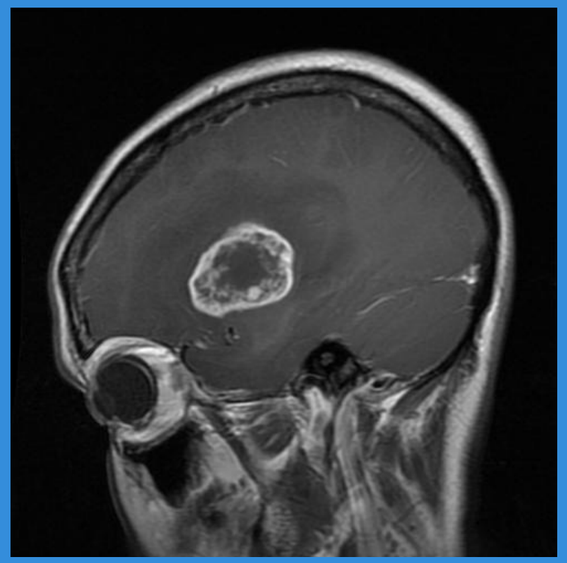


BUSINESS PROBLEM

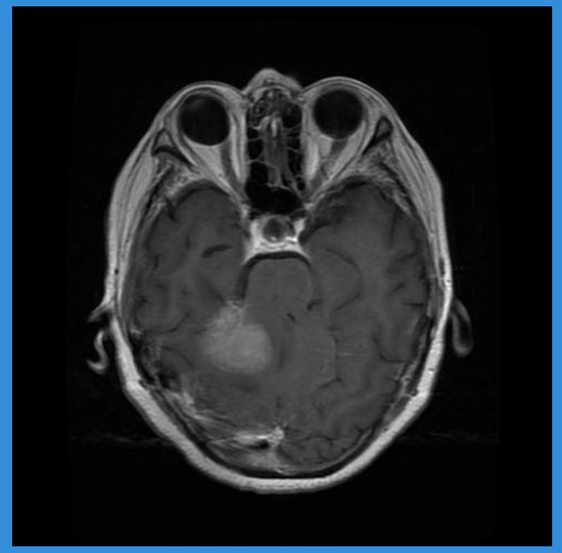
- Doctors without Borders is interested in developing AI tools which could detect and and classify Brain Tumors for use in developing nations

ABOUT THE DATA

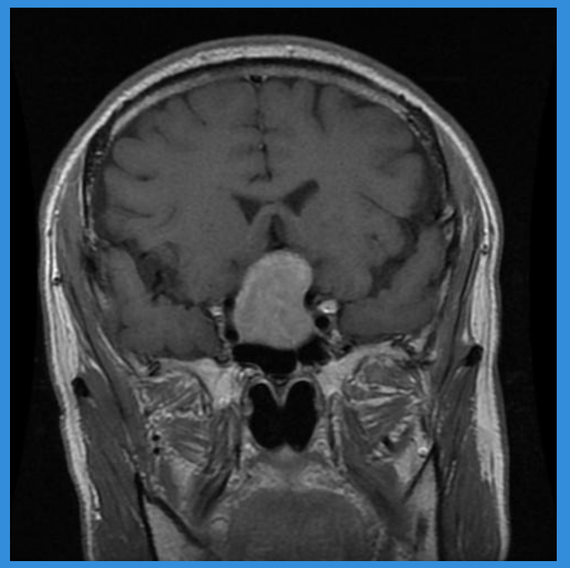
- Consists of brain MRIs which have one of three type of tumors and normal scans
- The three different tumor types were put into one group



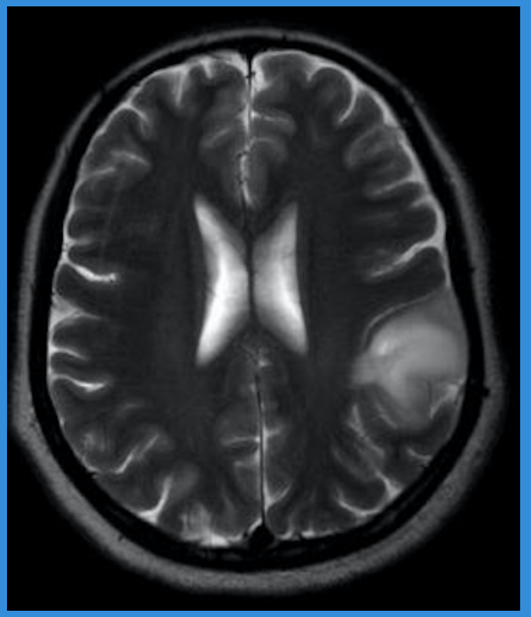
Glioma



Meningioma



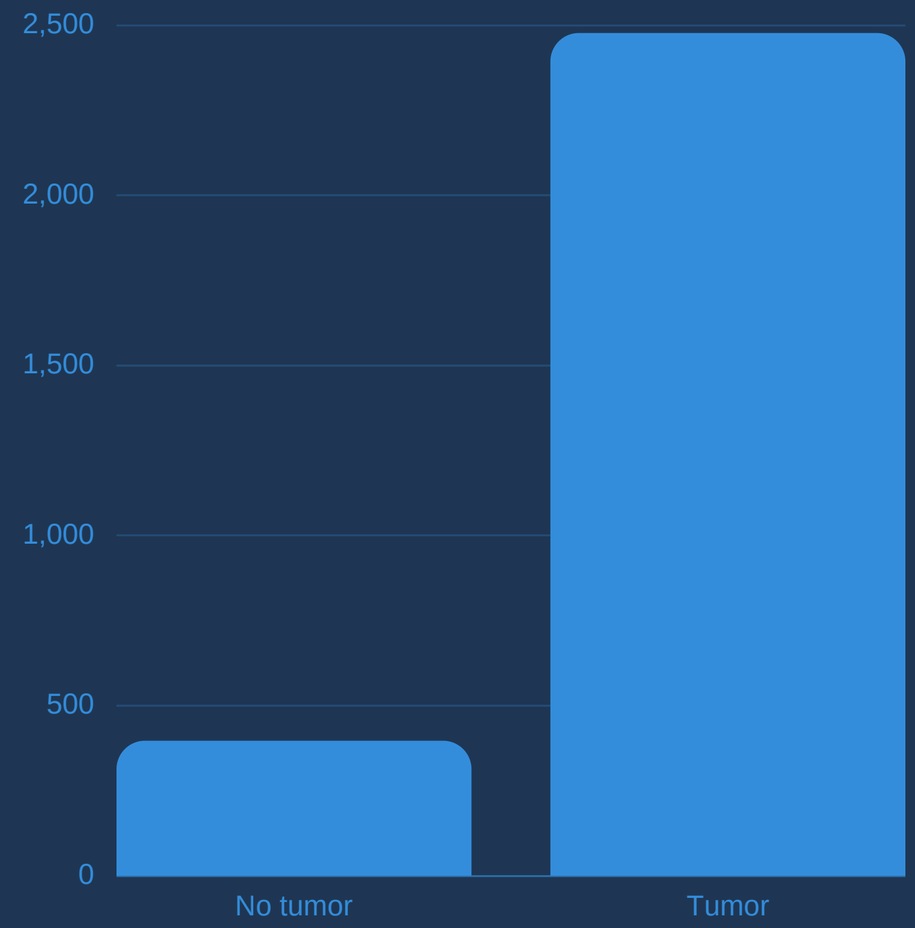
Pituitary



No Tumor

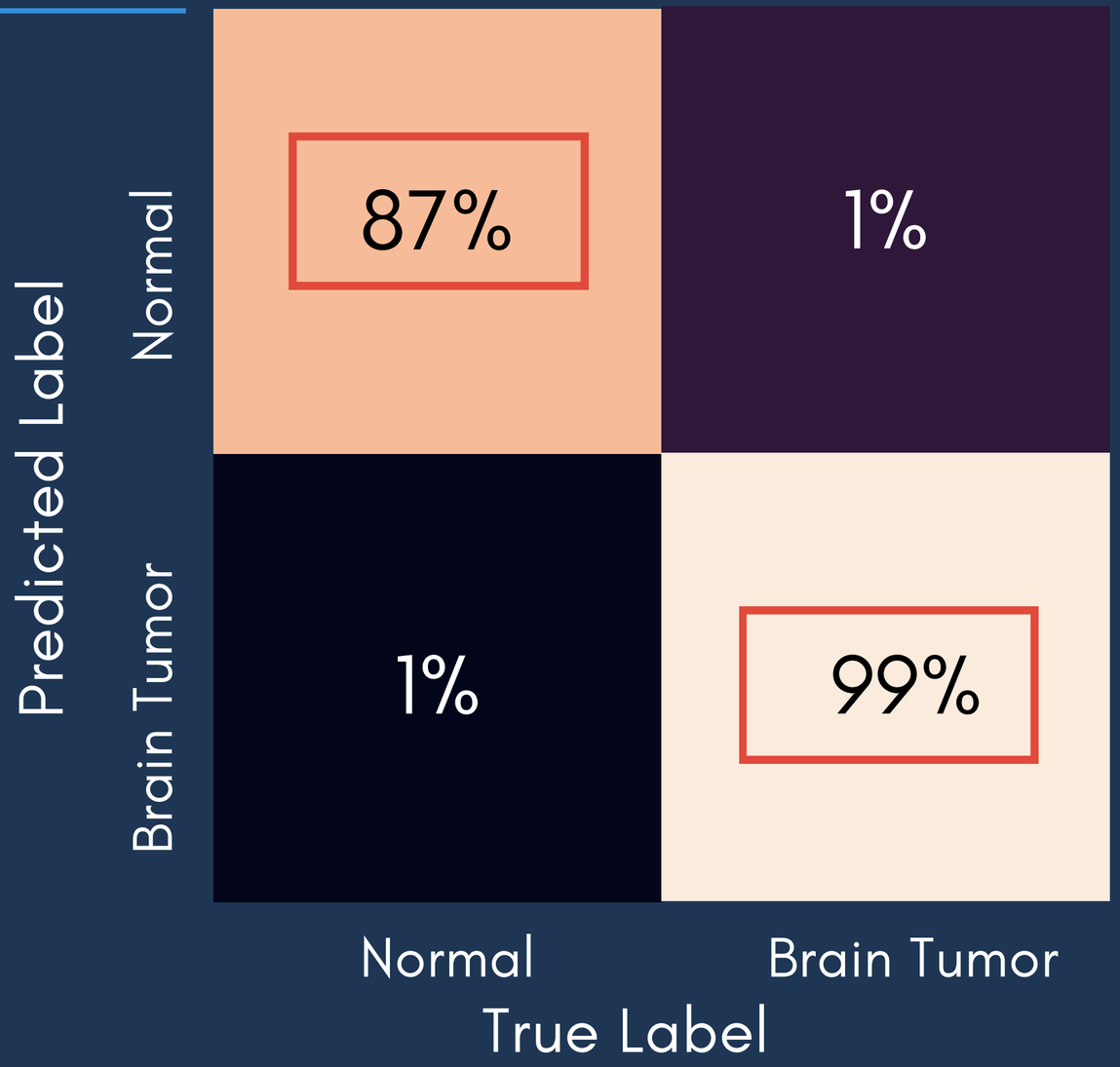
CLASS IMBALANCE

- In the training data, there were 2, 475 MRI scans with tumors, and 395 normal scans
- In total there are 3264 images



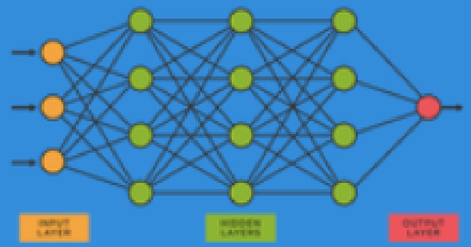
BEST MODEL

- Accuracy: 98%
- Error: 7%
- Recall: 99%



RECOMMENDATIONS

Doctors without Borders should implement this model:



QUALITY CONTROL CHECK

NEXT STEPS

- Deploy this model

- Develop a Brain Tumor multiclass classification model

THANK YOU!

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