Team Indicoders

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Abstract:

Our hackathon idea focuses on tackling the critical problem of accurately detecting whether cancer cells are malignant or benign. Leveraging machine learning algorithms and advanced image analysis techniques, it aims to analyse medical imaging data to determine the nature of cancer cells. Cancer is a very deadly disease with a high death rate, affecting millions of lives either emotionally and physically every day.

Problem Statement:

The type of cancer plays a significant role in determining the appropriate treatment plan. Different types of cancer require different approaches, such as surgery, chemotherapy, radiation therapy, immunotherapy, or targeted therapy.

In some cases, the interpretation of cancer-related tests involves subjective judgments by healthcare professionals. This variability can lead to inconsistencies and differences in diagnosis, impacting patient care and treatment decisions.

Collaboration between healthcare professionals, researchers, and technology experts is crucial to overcoming these challenges and advancing the field of cancer detection.

Proposed Solution:

Our hackathon idea focuses on tackling the critical problem of accurately detecting whether the cells are malignant or benign. Early identification of the cancer type allows healthcare professionals to tailor treatment strategies specifically to the patient using data provided from similar past cases, increasing the chances of successful outcomes.

Technologies and Resources:

* Flask
* Tensorflow
* Numpy
* Pandas
* Matplotlib
* Plotly
* Python
* Pickle
* HTML
* CSS
* Keras

Potential Impact:

The effectiveness of cancer detection methods relies on the quality of the technology and equipment used. Our ML model aims to increases efficiency of diagnosing the type of cancer, increases the number of patients that can be diagnosed in a day, and reduces the cost of treatment by decreasing the number of tests that have to be taken by the healthcare professionals.

Cancer treatments can have significant side effects that impact a patient's quality of life. Providing timely treatment gives a balance between eradicating cancer cells and minimizing the adverse effects on normal cells and healthy tissues.

Also, knowing the type of cancer can provide patients and their families with a sense of clarity and direction. Understanding the cancer type also aids in managing expectations and coping with the emotional challenges associated with the diagnosis.

Conclusion:

My friend’s mother was unable to receive a timely diagnosis due to the high number of tests required, and unfortunately ending up losing her fight against cancer. Every second is crucial in increasing the odds of survival, and being able to obtain an accurate diagnosis quickly can help healthcare professionals prepare a suitable treatment plan for the patient more easily and efficiently. Hence, using an ML model to allow doctors to take a look at data from similar cases of cancer which have already been addressed will help in providing a treatment plan at a faster rate. Seeing the rise of concepts of AI and ML in recent times gave us the idea to implement ML in a way that would be possible for us to help people. When we saw that most hospitals were operating very inefficiently and charging high costs for tests and treatment, we decided to find a way to improve this situation. This hackathon has given us a platform to address this problem by sharing our project, and we still plan to continue working on it even after the hackathon ends.

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