HealthLink

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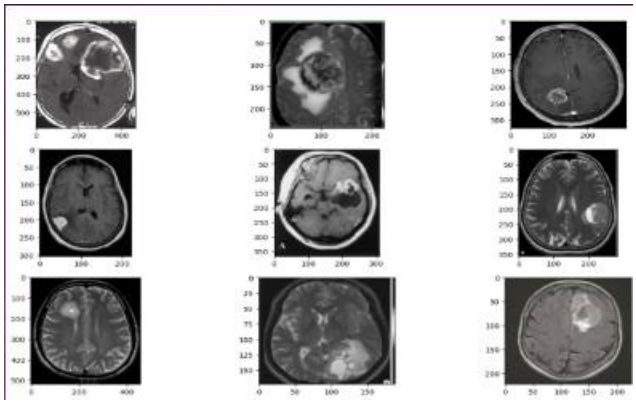
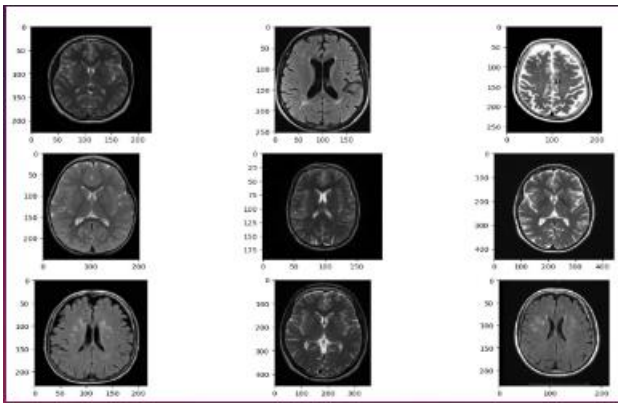
Problem Definition

Brain tumors are a serious medical condition that affects millions of people around the world. According to the World Health Organization, brain tumors are the second leading cause of cancer death in children under the age of 15. Early diagnosis and treatment are essential for improving the chances of survival for patients with brain tumors. According to statistics, brain tumors account for approximately 2% of all cancer cases globally. Glioma, meningioma, and pituitary tumors are among the most common types of brain tumors.

Brains with tumors



Normal Brain



Background & Motivation

The current standard for brain tumor diagnosis is magnetic resonance imaging (MRI). However, MRI scans can be time-consuming and expensive, and they require patients to travel to specialized imaging centers. In addition, MRI scans can be difficult to interpret, even for experienced radiologists. Automating the process through advanced machine learning techniques can provide faster and more accurate diagnoses, leading to timely treatment interventions.

Solution

Our web app will use machine learning to automate the classification and segmentation of brain tumors from MRI scans. This will make it easier and faster for doctors to diagnose brain tumors, and it will also reduce the need for patients to travel to specialized imaging centers.

App / Web overview

The web app will provide an intuitive and user-friendly interface. Users will be able to upload MRI scans, which will then undergo automated processing for tumor classification and segmentation. Additionally, our app will integrate a doctor recommendation system to help patients find relevant specialists based on their specific tumor type and location. This personalized recommendation will ensure that patients receive appropriate care from experienced doctors with expertise in treating their specific condition. We also provide a personal health care assistant called LEXA who takes care about user's(patient's) health situation.

Uniqueness

What sets our app apart from other similar competitive apps/websites is its combination of accurate? tumor classification and segmentation using advanced neural network models, along with a personalized. doctor recommendation system. The integration of these two components within a single platform makes. Our app is a comprehensive solution for patients and healthcare professionals. Furthermore, our app will prioritize user experience and provide an intuitive interface that is accessible to users with varying levels of technical knowledge.

Implementation

● Data collection: Gathering a diverse and comprehensive dataset of MRI images containing glioma, meningioma, and pituitary tumors, along with associated annotations.

● Model development: We will use a deep learning model to classify and segment brain tumors from MRI scans. The model will be trained on a large dataset of MRI scans with known tumor labels.

● Doctor channeling and recommendation system: The app will also include a doctor channeling and recommendation system. This system will help patients find qualified doctors who. specialize in brain tumors.

● Health assistant: The app will also include a health assistant. This assistant will be able to answer. patients' questions about brain tumors and provide them with support.

● Cloud computing: Our app will be hosted on a cloud computing platform, such as Amazon Web Services or Google Cloud Platform. This will allow us to scale the app to meet the needs of a large number of users.

Marketing Plan

● Target audience: Identify the specific demographics and needs of our target users, such as patients, caregivers, and healthcare professionals.

● Online presence: Establish a professional website and social media profiles to enhance visibility and reach. Utilize search engine optimization. (SEO) techniques to improve online discoverability.

● Partnerships: Collaborate with relevant medical associations, hospitals, and clinics to promote the app/web and gain credibility within the healthcare community.

● Long-term sustainability: Continuously gather and analyze user feedback to improve the app/web based on user needs. Regularly update. Content and features to maintain user interest and attract new customers.

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