Synopsis On

Peripheral Facial Paralysis

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INTRODUCTION

Peripheral Facial Palsy generally refers to weakness of the facial muscles, inability to move the muscles of the face. When the facial nerve is missing or not working properly, the muscles in the face do not receive the necessary signals in order to function properly.
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It can be categorized into two types based on the location of the casual pathology:

Central facial palsy: Due to damage above the facial nucleus

Peripheral facial palsy: Due to damage below the facial nucleus, there are different degrees of facial paralysis

Facial palsy can affect one or both sides of the face, with noticeable drooping of the mouth and problems with speaking, swallowing saliva, eating, blinking, or communicating through natural facial expressions. This website would be able to suggest the accuracy of recovery rate.

USE OF THE PROJECT

Peripheral facial paralysis is one of the commonest mononeuropathies. The frequency of idiopathic peripheral paralysis or Bell's palsy varies between 62% and 93% of all cases, with an incidence of between 14 and 25 cases per 100,000 inhabitants per year.

Facial Paralysis does not affect only movement of facial activities but also affects the mental health which includes Social Alienation, Depression, Emotional vulnerability due to loss of beauty. It’s very important to detect facial paralysis on its early stage so that it can be recovered before the fall of its physical as well as mental damage.

- Regular monitoring will help in early recovery
- Tracking the recovery rate
- Tracking will help in creating a positive affirmation of recovery
- To save the patient from living a diminished quality of life

FUNCTIONAL SPECIFICATION

This project will be hosted on Heroku server which provides free hosting services .When the user hits the web page for the first time , all they need to do is to put the details of the self. When they logged in with that account, the home page of the website will appear.

In the home page we are providing the facility of analyzing the image of the palsy suffered patient. This page will let the user click a photo or upload an image from a given option from the system. After uploading the image the user will be getting the results if the patient is suffered from Peripheral Facial Palsy or not.

The face keypoint detection technology is used in this filter application .The marking of important areas of the face, such as the eyes, corners of the mouth, and nose, that are relevant for a variety of tasks, such as face filters, emotion recognition, and pose recognition, using convolutional neural network and computer vision techniques to perform facial Keypoint detection.
Convolutional Neural Networks (CNN) has a deep structure that allows them to extract high-level information and provide better precision when identifying each important point. Convolutional networks are designed to anticipate all points at the same time.

Software Specification:

- Technology Implemented : CNN , Computer Vision
- Language Used : Python(Flask)
- User Interface Design : HTML ,CSS ,JS,Bootstrap
- Development Environment : Jupyter Notebook ,Heroku , VS code
- Web Browser : Google Chrome , Mozilla Firefox, Opera, Microsoft Edge

Hardware Requirements:

- Processor : 1.9 GHz or x64-bit dual core
- Operating System : Windows 7, windows 8 ,Linux & MAC compatible.
- RAM : 2GB
- Hardware Devices : Laptop ,Desktop , Tablets.
- Hard disk : 600 MB
- Display : Super VGA with a resolution of 1024 x768

FUTURE SCOPE

In the modern era of evidence-based medicine, the field of facial nerve management has expanded exponentially with critical questions that will help future facial reanimation surgeons refine the approach for patients with acute and long-standing facial paralysis.

This project will result with respect to recovery rate of the facial nerve patient, as well as future surgical outcomes.

For patients who have had a stroke, getting medical attention quickly can greatly improve the possibility of a full recovery with limited damage to the brain and body.

Rehabilitation and preventative measures will vary depending on the type and severity of the stroke.

Unfortunately, even with all current procedures for therapy, some cases of facial paralysis may never completely go away. For this patient, physical therapy, and eye care can help prevent any further damage and improve quality of life.

Reference -:

- https://www.researchgate.net/publication/334763794_Peripheral_facial_paralysis
- https://samarpanphysioclinic.com/facial-palsy-treatment-exercise/
- https://www.healthline.com/health/paralysis#treatment
- https://pubmed.ncbi.nlm.nih.gov/10904952/