

EMPOWERING PARALYSIS WITH EYE CONTROLLED TECHNOLOGY

TEAM: TECHMYSTICS

TEAM MEMBERS:

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DIVERSITY AND INCLUSION

OBJECTIVE

Our product is a revolutionary solution designed to empower paralyzed individuals with an unparalleled level of independence in the digital realm. By seamlessly integrating advanced eye-tracking software and image recognition, our innovation enables precise and intuitive control over computers and technology using only eye movements.

The main **objective** of this project is to enable users to type text using their eyes' movement. By detecting and interpreting eye movements, the system enables users to select **predefined actions or type on a virtual keyboard**, triggering **custom voice** alerts to notify caregivers or nearby individuals of their needs.

TECHNOLOGIES USED

OPENCV

SHAPE_PREDICTOR_68_FACE_LANDMARKS.DAT

DLIB

Math (hypot)

PYGLET

Numpy

FLOW OF THE PROJECT

- Program starts by displaying a Menu with two options -**Left and Right**.
- The user is prompted to look towards either the left or right side of the screen to **select the corresponding keyboard layout**.
- The user interacts by **blinking** to select a key.
- The program shows a **bar when the user blinks**. If the bar fills up within a set time, it recognizes the blink as **intentional and performs an action**. This distinguishes deliberate blinks used for interaction from unintentional ones.
- The selected letter gets **typed** in the screen.

FUTURE SCOPE

Our project aims to extend its impact by empowering paralyzed individuals with autonomous **control over domestic appliances**. By leveraging the technology developed for eye-controlled input, we envision a future where individuals with paralysis can seamlessly interact with their environment, including controlling appliances such as **fans and lights**, with intuitive eye movements and **blinks**. This advancement holds the promise of enhancing independence and quality of life for individuals facing mobility challenges, offering them greater autonomy and freedom within their homes.