



## GAZE DETECTION SYSTEM FOR DEVICE NAVIGATION

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*\*Picture for representation purposes, our  
technology is purely software driven*

# WHO DOES A TOUCHSCREEN/TRACKPAD **LIMIT**?

**25  
lakh**

**Children with  
Cerebral Palsy  
living in India**

**25000**

**People who have  
arm amputations  
annually in USA**

**5.8  
lakh**

**Indians living  
with Parkinson's  
Disease**

Millions of People with Disabilities (specifically cerebral, locomotor, and multiple disabilities) are held back from using technology due to the conventional design of input interfaces. **Existing solutions** are **not accessible or affordable** for the general Indian population. For instance, a keyboard for people with CP retails at ₹81,000. It is also often **not compatible** with phones and tablets.

# Helping the people with disability interact with digital devices by combining the User Interface with a Gaze-Tracking System to improve tech-penetration among them using computer vision

01



## Installation

Buy product license, login with credentials, install application

02



## Setup

Enable environment and allow webcam access on your device

03



## Usage

Move the cursor through moving eyes, click by long blink, double click by nodding

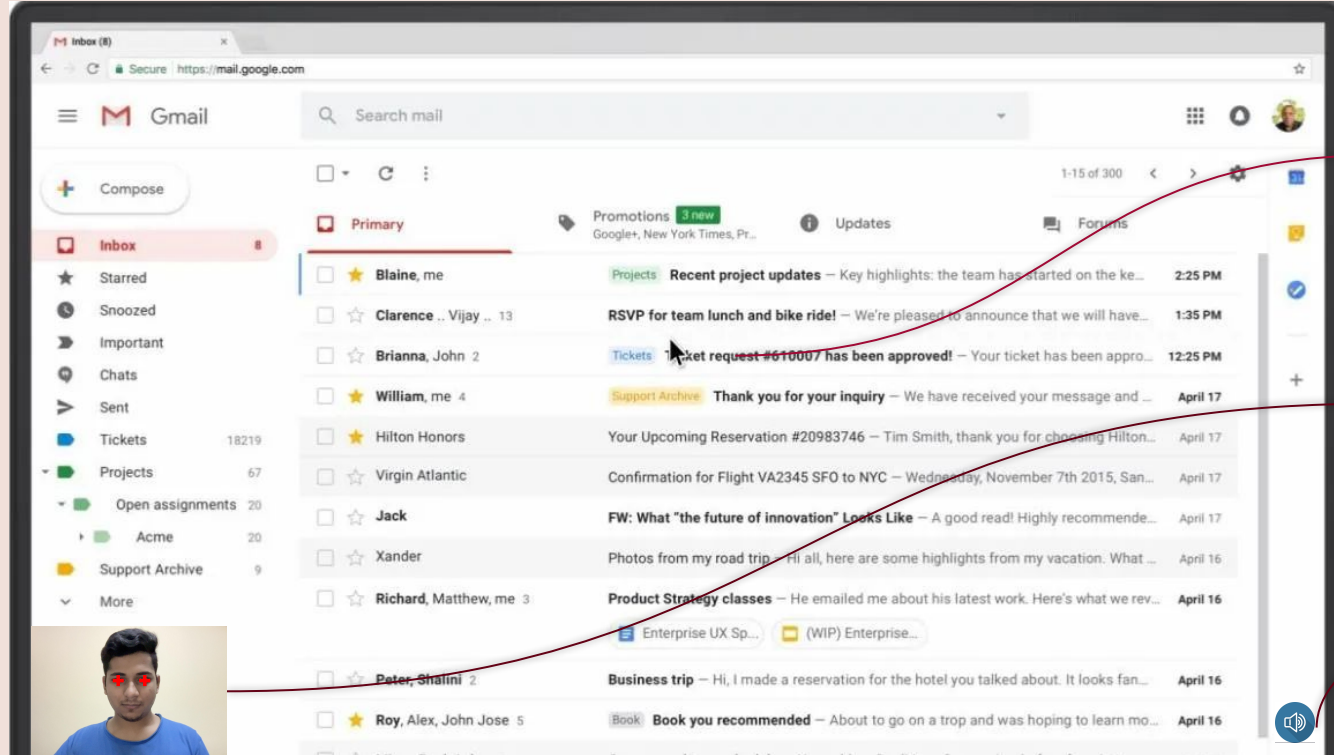
04



## Improvements

Audio-visual assistance for step-by-step usage of app/website

# User Interface



## Mouse Tracker

The cursor moves with the movement of the user's eyes

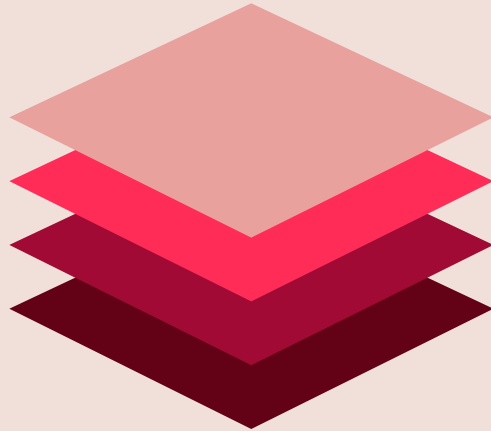
## WebCam Feed

Detection of the movement of eyes using computer vision

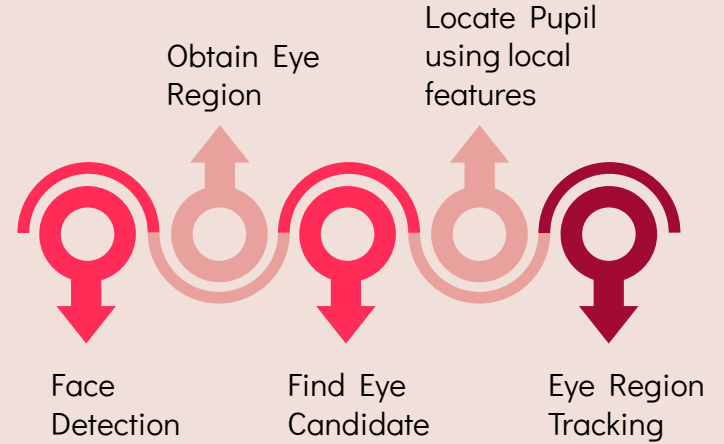
## AV Guidance

Audio-visual guidance for step-by-step usage of app/website

# Technology Stack



- Gaze Detection
- Image Processing for Selection
- Android/iOS Screen Overlay
- Audio-Visual Assistance



Long Blinking to  
click, double blink  
for a help Pop-up  
Menu

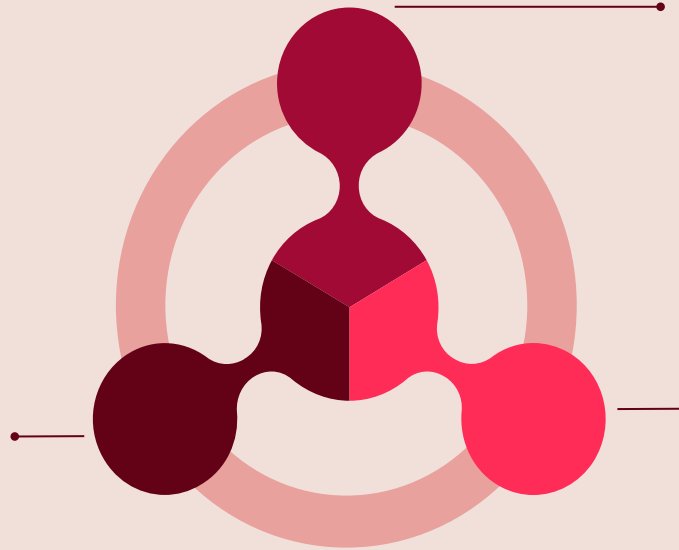
Items on Screen  
Selected based  
of Gaze

# Feasibility Analysis

## FINANCIAL

### Costs:

- **Material Costs:** Hardware
- **Research and Development Costs:** Hardware and Software
- **Business Costs:** (manufacturing, marketing, sales and support)
- **Estimated Material Cost:** ₹55,000 - ₹60,000 per system for each high resolution, high frame-rate camera.
- **Cost-Lowering Approaches:** Commercial-over-the-shelf-cameras, Build on top of existing Image Processing Libraries.



## ORGANIZATIONAL

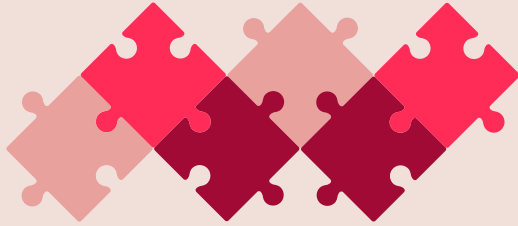
### Resources:

- Team of software developers, designers, market experts and special-needs experts.
- **Third Party Integration** with Web Interfaces.
- **Software:** Compute Resources, Relevant Datasets.

## MARKET FEASIBILITY

- Similar Products: KEY-X, myGAZE, Eyegaze Edge.
- **Integration of Audio-Visual Assistance** increases reach and adoption of the system.
- Removal of educational and technological barriers.

# Accessibility



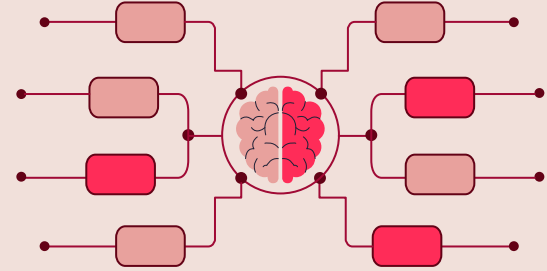
## Scalable Model

No Hardware components are required, making the solution suitable to anyone with limb impairments



## Cost Effective

The only expense involved is for an internet connection, which is much more affordable than existing hardware-based solutions



## Platform Agnostic

The user experience remains identical across several platform choices

# Impact

## Benefit to Individuals

The ability to navigate technology independently not only instills self-reliance, but also boosts self-esteem and morale.

## Breaking Barriers

Millions of students struggling with disabilities will find themselves equipped with access to education and jobs.

## Fostering Inclusivity

We move one step closer to helping people with disabilities use technology for their advantage.



## Promoting Innovation

Our product opens up avenues for further research in educational technology for students with disabilities.

## Future Directions

We aim to enlarge our enterprise through creating partnerships, offering subsidies, and eventually enabling large-scale supply.







**THANK YOU**

