V.I.S.I.O.N

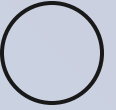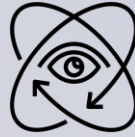**VISUAL INTERFACE FOR SEAMLESS INTERACTION, OPERATION & NAVIGATION**

Team MALA:
Khoo Yong Hui
Si Ming Zhou
Siah Wee Hung

ENHANCING PATIENT CARE THROUGH EYE GAZE TRACKING IN XR
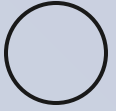
Target (but not limited to):

① **Healthcare Providers**

② **Patients with disabilities**

- Paralysed
- Missing limbs
- Lack certain motor function such as limited head mobility

TARGET CUSTOMERS

Healthcare Providers

Surgeons need a **sterile, hands-free method** to interact with digital interfaces.
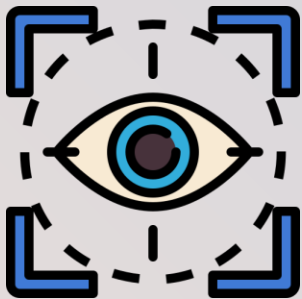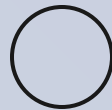
Patients with disabilities

Sarah Wise
Intuitive & accessible way to communicate their needs, gain independence, enjoy some normalcy even in their vegetative state
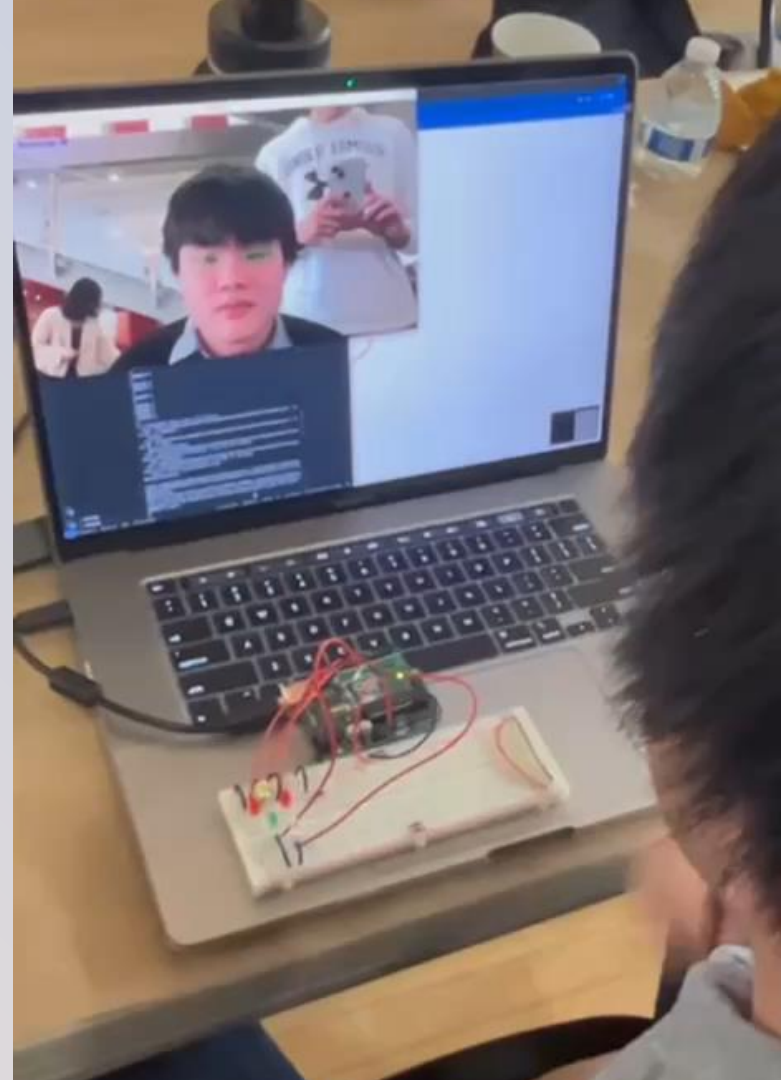
INSPIRATION

EYE TRACKING
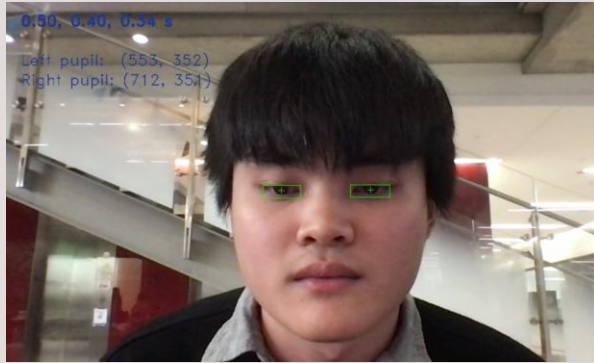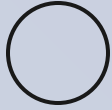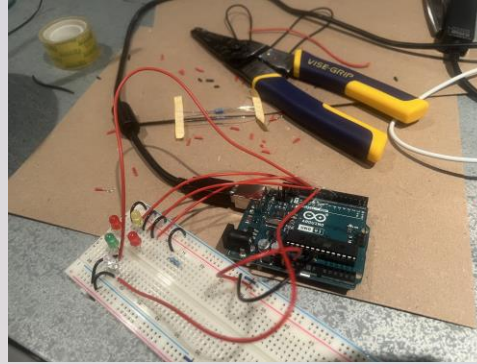
+

SEAMLESS, INTUITIVE & ADAPTABLE INTERFACE

V.I.S.I.O.N VIDEO DEMO

CHALLENGES

ACCURACY AFFECTED BY POOR WEBCAM QUALITY

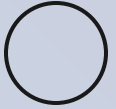**INTEGRATE W/ HARDWARE IN RESPONSIVE MANNER**

BUILDING A SIMPLE YET EXTENSIVE UI

OTHER APPLICATIONS/FUTURE IMPROVEMENTS

STAKEHOLDER: MEDICAL PROFESSIONALS

STAKEHOLDER: PATIENT

CONTROL MEDICAL TECH (EG PATIENT VITALS MONITOR)

DATA STORE AND RETRIEVAL PATIENT DATA

NAVIGATE MEDICAL GUIDELINES

PATIENT TRIAGE KIOSKS

INTERACTIVE EDUCATIONAL CONTENT ABOUT PATIENT'S HEALTH CONDITIONS

HEALTH EQUITY & RESPONSIBLE DESIGN
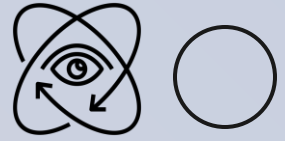
SOCIETAL

Design: Eye tracking
Impact: Allow
the physically disabled to
live with dignity

Design: Versatility of
Software Components
Effect: Function can be
adapted to be used in
almost any situation using
just your eyes

ENVIRONMENTAL

Design: Eye tracking
Effect: Eye navigation allows
patients/doctors to do
simple task without the risk
of **physical contamination**
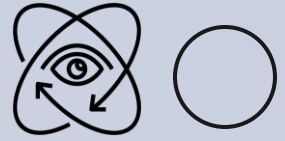
ECONOMIC

Design: Simple, yet
functionally diverse UI
Effect: Services wide range of
patient needs, freeing labor effort
from healthcare
professionals. Improves quality of
life.

Design: Low implementation
and recurring cost (webcam)
**Effect: Lower healthcare
operating costs**

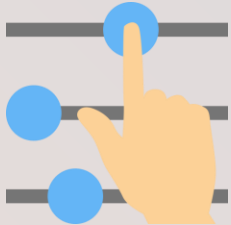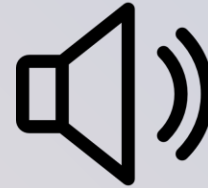# HEALTH EQUITY & RESPONSIBLE DESIGN

HEALTH EQUITY

Color and language can be easily changed to accommodate all patients
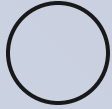
Functions/apps can be customized easily based on the needs of the patient

Audio feedback on eye tracking can be implemented

COMPETITORS ANALYSIS

Potential competitors	Analysis
	Focused on other areas of eye-tracking application, such as gaming and automotive. Expertise are not in creating simple & effective UI for patients. One possible option would be to **partner** with them and adapt their technology to our use case of making simple, accurate and seamless eye navigation. V.I.S.I.O.N is **non-intrusive, relatively cheap & simple to setup**

FINANCIAL CONSIDERATIONS & FEASIBILITY
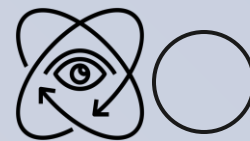
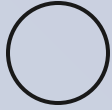| Cost Breakdown	Estimated cost
Software production costs	Low end: $500 - $600 per unit
R&D	Middle range: $600 - $800 per unit
Hardware	
Training	High end: $1000

GOVERNMENT GRANTS/PARTNERSHIPS

MEDICAL GRANTS, FOUNDATIONS

INSTITUTIONS/COMPANIES PARTNERSHIP

V.I.S.I.O.N IMPLEMENTATION

LOW INITIAL COST

Simple Technology Infrastructure

- Materials: Monitors, camera, eye-navigation software
- Reusable & Extendable modules to increase/update functionality at low/no cost

Reduce Human Resources

- Reduction in demand for nurses / caretakers

TRAINING & SUPPORT

Lower learning curve

- Provide training materials & resources for patients, caregivers & healthcare professionals (especially for elderly who are less technologically savvy)
- Reliable technical support for ensure smooth adoption and usage

V.I.S.I.O.N

Every blink, every gaze, is a step towards greater **independence and control.** With VISION, we're putting the power of technology back into the hands of those who need it most.

THANK YOU FOR LISTENING!

ANY QUESTIONS?