TMT4053 MULTIMODAL INTERACTION TECHNOLOGY
Final Assessment (30%)

Case Study: Multimodal Interaction Challenge at SaraTech Solutions

Learning outcomes involved: CLO1: Examine key concepts in Multimodal Interaction Technology. [C4]

Introduction

SaraTech Solutions, a startup located in Sarawak, was established in 2020. With innovative minds, the company is a leader in the design and development of multimodal technology, combining touch, voice, and gesture-based inputs. Their flagship product, MobiGlove, is a glove designed to translate physical hand movements into digital inputs, integrated seamlessly with an AI-driven voice recognition system.

Context

Following a pilot test at a tech expo during the 27th World Congress on Innovation & Technology 2023 and the 6th International Digital Economy Conference Sarawak 2023, SaraTech was met with a spectrum of feedback on MobiGlove. Although many lauded its precision and voice-gesture harmonization, a significant number voiced discomfort while wearing the glove and mentioned misinterpretations, particularly in louder environments. They wanted a mobile app to connect with the glove interaction process. The figure shows the prototype of MobiGlove.

Operational Structure

The MobiGlove's development process is structured into four core sections:

- Gesture mapping and calibration
- Voice recognition and ai training
- Hardware integration and comfort
- Real-time feedback and error correction

A meticulous examination was undertaken, emphasizing:

- Comfort analysis during prolonged use
- Voice recognition in various noise levels
- Gesture accuracy and consistency
- Integration reliability across different devices

Human Factors and Safety

SaraTech’s commitment to user experience is evident in their dedicated teams. They wanted a Multimodal Interaction Specialist, who will scrutinize the natural flow of gestures and voice commands, ensuring a user-friendly experience.

INSTRUCTIONS

As a multimodal app developer, design a mobile app to connect MobiGlove. Give it a new unique name. The multimodal interaction should be user-friendly, intuitive, clean, and professionally designed. Showcase your Multimodal Interaction Technology knowledge and skills.

Use **Figma** to design the **minimum of 10 screens** (but no extra marks if you have over 10 screens). All buttons should be clickable.

Home screen

- App name and/or logo.
- Display connection status with MobiGlove.
- Quick access to voice, touch, and gesture settings.
- Overview of battery life and other device diagnostics.

Settings and personalization

- Allow users to customize gesture sensitivity, voice command languages, and more.
- Provide options for firmware updates and device calibration.
- Integration settings for linking with other devices or platforms.

Gesture library and voice commands

- Showcase a list of pre-defined gestures and associated actions.
- Allow users to add custom gestures or modify existing ones.
- Visual and audio tutorials on how to execute gestures correctly.

Feedback and support

- Include a feedback form for users to report issues or suggest improvements.
- Access to a digital user manual, troubleshooting guides, and FAQ.
- Contact details for SaraTech's support team.

Integration & Extensions

- Highlight features and benefits when integrating MobiGlove with other platforms like VR or IoT devices.
- Showcase available extensions, plugins, or companion apps for MobiGlove.
- Option to purchase or download extensions directly from the app.

Submission Details

Submit your Figma project URL only. Set it to be openly viewable/editable. Double check your link to ensure it works before submitting.

Evaluation Criteria

Evaluation Criteria	1 Mark	3 Marks	5 Marks
Home Screen Design	Basic layout with limited clarity.	Functional layout but lacks branding or flair.	Highly intuitive layout, clear branding, and visual appeal.
Settings & Personalization	Minimal options with little customization.	Adequate options but may lack depth or clarity.	Comprehensive customization options, intuitive navigation.
Gesture Library & Voice Commands	Limited list, missing key functionalities.	Good list with basic functionalities, some gaps.	Extensive list, detailed functionalities, user-friendly design.
Feedback & Support	Only basic contact info provided.	Includes contact and some additional resources.	Comprehensive support options, resources, and easy access.
Integration & Extensions	Vague or generic integration options.	Some clear integration pathways and descriptions.	Detailed integration steps, broad range, and user guidelines.
User Tutorial	Incomplete or confusing flow.	Basic, clear, but limited flow.	Comprehensive, engaging, and user-friendly flow.

Max total marks: 30%