Smart Glass Based Remote Guidance System

INTRODUCTION

Remote communication systems currently have issues such as:

- Misinterpretation of instructions
- Inaccuracy of tasks

Our project aims to solve these issues by creating an application with smart glasses that allows users to broadcast their hand gestures to other users, and improves the clarity in their communication.

Design

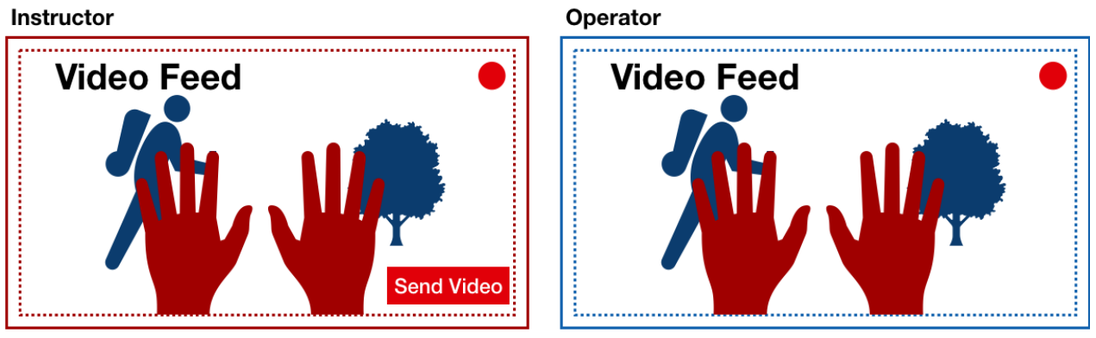

Figure 2: Video streaming & hand segmentation

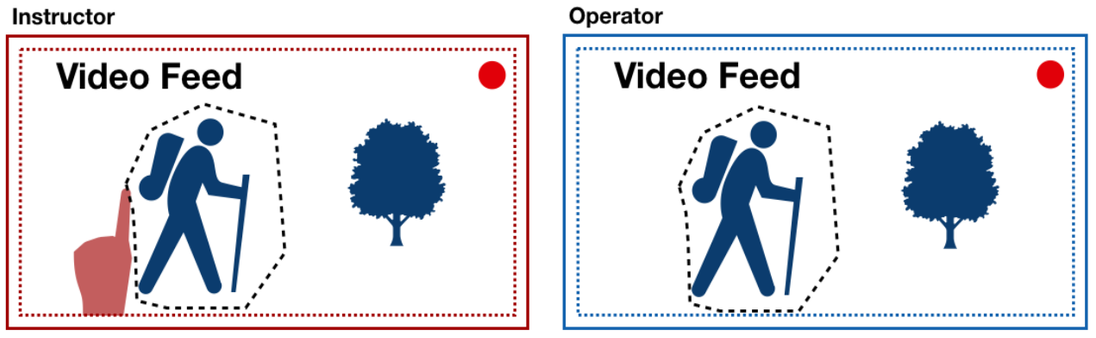

Figure 3: Object tracing

Figure 1: Vuzix M100 smart glasses

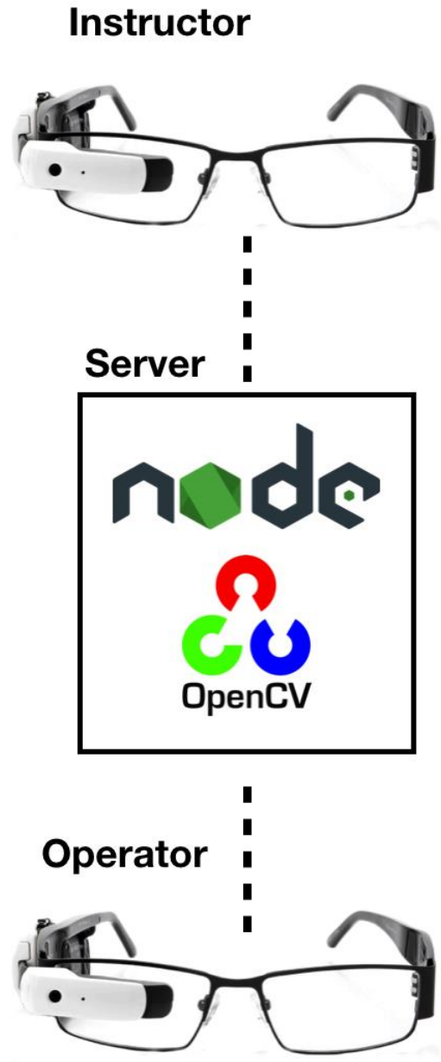

Figure 4: System architecture

Results

We have created this application using NodeJS as the server and OpenCV for video processing. We have achieved the following features:

- ✓ Video streaming
- ✓ Server processing
- ✓ Hand segmentation
- ✓ Finger identification
- ✓ Object tracing

Project Team:

Krishna Adhikari
Kosala Edirisinghe
Keagan Foster
Migara Gunarathne
Dineth Gunawardena
Ayub Khan
Jimmy Li
Shenal Nirushka
Lyndon Prado

Dr. Tony Huang
Swinburne Department of Computer Science and Software Engineering