

Name: Kashyap Mistry  
PRN: 21070127028  
Class: RA2

## **FRA EXPERIENTIAL LEARNING 2**

Lil'Flo, a socially assistive robotic tele-rehabilitation system for deployment in the community. As shortages in rehabilitation professionals increase, especially in rural areas, there is a growing need to deliver care in the communities where patients live, work, learn, and play. Traditional telepresence, while useful, fails to deliver the rich interactions and data needed for motor rehabilitation and assessment.

Lil'Flo is targeted towards pediatric patients with cerebral palsy and brachial plexus injuries using results from prior usability studies. The system combines traditional telepresence and computer vision with a humanoid, who can play games with patients and guide them in a present and engaging way under the supervision of a remote clinician.

It has its own challenges like its cost of making, Geographic location, Shifting demographics, supply side challenges, inter and intra clinician variability, Fewer patient Interaction and lack of Clarity with respect to patient. We surveyed 13 rehabilitation clinicians in a virtual usability test to evaluate the system.

### **Project Goals:**

- Develop and Evaluate a robotics system which uses a social robot to enhance tele-health interaction.
- Develop a computer vision based objectives diagnostics tools for upper extremity function
- Covid-19
  1. General Testing
  2. Survey Wider Community

### **Designing the ROBOT:**

The plan of a spaceman was chosen out of the suggested creature, doll, and spaceman thoughts. In arrange to anticipate the robot's see from favoring one gather over another amid intuitive with the patients, this was done. The robot was outlined to see more like a spaceman than a individual whereas still protecting a humanoid frame in arrange to energize patients to unreservedly associated with it and examine their issues. The robot's head is round, prepared with an Driven screen for communicating feelings, and incorporates structures that take after anticipating ears to donate it a

more human appearance. The rest of its body is planned to operate like a human body. According to studies, individuals favor a energetic confront to a inactive one. A survey was too carried out to discover out how people seen the distinctive confront expressions. The robot's plan empowers its various joints to move in a way that's comparable to how people do. Factory-made engines are utilized for effortlessness in upkeep.

**Results:** The system is more portable, extensible, and cheaper than our prior iteration, with an expressive humanoid. The virtual usability testing shows that clinicians believe Lil'Flo could be deployed in rural and elder care facilities and is more capable of remote stretching, strength building, and motor assessments than traditional video only telepresence.

**Conclusions:** Lil'Flo represents a novel approach to delivering rehabilitation care in the community while maintaining the clinician-patient connection.