Princess Chulabhorn Science High School Satun

CareLink+ System To Help Bedridden Patients With AI Handtracking

Thailand-Japanese Student ICT Fair 2024

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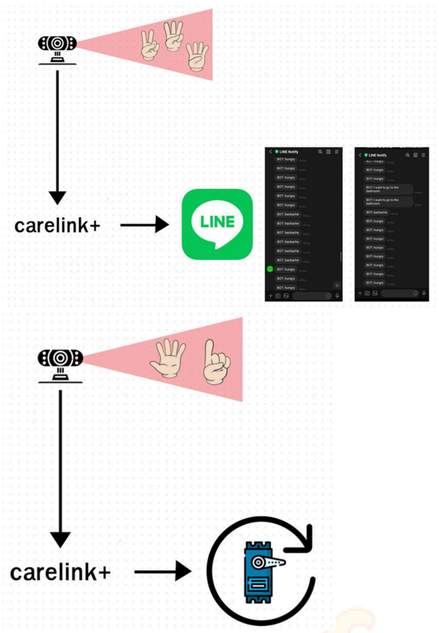
Problem

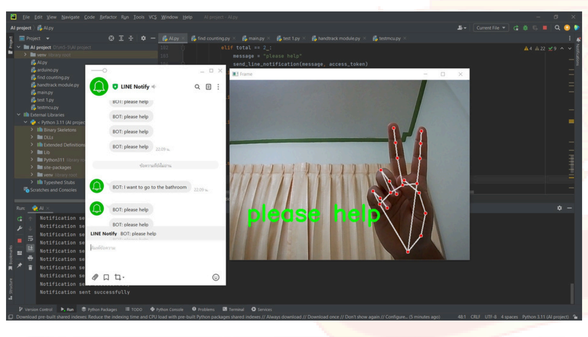
The developers are interested in applying AI Handtracking in the medical field. They chose this technology because it is easy to monitor, straightforward, and has few limitations, making it suitable for practical use. With relatives who are bedridden, they recognize the challenges of providing close and consistent care. Currently, there are about 1 million bedridden patients in Thailand, a number that is expected to rise. Bedridden patients are those whose bodies have deteriorated to the point where they must lie in bed all the time. They may be able to move a bit but cannot assist themselves in other ways. They can be categorized into three levels of severity:

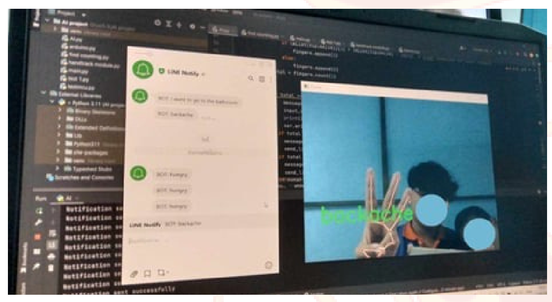
1. Green Group: Mildly bedridden; can still move their bodies somewhat.
2. Yellow Group: Not in good health; can move parts of their body.
3. Red Group: Paralyzed patients who cannot move at all.

The developers studied AI Handtracking extensively, creating and coding a system to gather information about the needs of bedridden patients and their caregivers. They designed and developed a system to assist bedridden patients, focusing on facilitating care for those in the green and yellow groups. This system also aims to save caregivers' time, as they will not need to monitor patients constantly.

Project design







Features

This project incorporates AI Handtracking technology to enhance the system's usability, making it simple, fast, and practical, especially for patients in the green and yellow groups who cannot assist themselves. Therefore, this system can certainly provide help (for bedridden patients who can still move their fingers). Unlike other projects, there is currently no system specifically developed to assist this particular group of patients.

Benefits

1. Can assist bedridden patients.
2. When the patient displays hand gestures, notifications are automatically sent via LINE Notify.
3. Commands are available for adjusting the bed position.
4. Commands are available for turning the lights on and off using hand gestures.
5. Addresses the issue of not having enough time to care patients.

Objectives

1. To design and develop a system to assist bedridden patients.
2. To test the effectiveness of the Carelink+ system and notifications via LINE Notify.

Scope

The system for assisting bedridden patients can only be used with patients who can move their hands and fingers (specifically bedridden patients in the green and some in the yellow groups).

Experiment

Experiment	Results
Raising one finger	rotated the servo motor
Raising two finger	Displayed the message "Please help"
Raising three finger	Displayed the message "Backache"
Raising four finger	Displayed the message "Toilet"
Raising five finger	rotated the servo motor back

Conclusion

Experiments showed successful notification delivery and proper execution of commands, confirming that Carelink+ meets its practical objectives. In the future, it can be adapted for other types of patients.