Digital Medication Management for People with Alzheimer’s Disease

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Alzheimer’s Disease

Goal of Project:
Create a system to help patients with Alzheimer’s Disease (AD) manage their medication.

AD is a neurodegenerative disease that causes memory loss, confusion, and renders one unable to complete complex tasks.

Challenges may include:
- Contraindications between drugs due to comorbidities
- Difficulty managing all the medication

Early Stage:
1. Delays to seek medical help for their symptoms
2. Confusion that symptoms can be from old age
3. Other medications may introduce unwanted interactions with AD medications

Later Stage:
1. Feels needy, helpless, and does not want to be a burden
2. Frustrated with lack of independence

Computer Board (Le Potato) - host the server to communicate with the mobile app
- Ubuntu Server OS for receiving and sending
- Server built with Express

Dispenser - patient control peripherals
- Microcontroller (Arduino Mega)

Medication list
- Medication wheel – easy to dispense
- 4 stepper motor drivers, LEDs, pushbutton

In our project, we:
- Provided crucial aid in managing complex medication regimens
- Utilized patient data for early AD diagnosis and contraindication detection with ML/DL
- Have less motors but still scalable for more pills
- Computer Vision for automated pill intake confirmation

Conclusion and Future Work

Some Next Steps:
- Offering explanation on drug contraindications and providing 24/7 medical support

References and Acknowledgments


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