# Elder Care Rover Project Documentation

## Overview

The Elder Care Rover is a smart assistant designed to aid elderly individuals through:

* Voice-controlled reminders
* Facial recognition-based user identification
* Wake word activation
* Daily and one-time task management
* Medication schedule tracking
* Sleep alarm functionality

## Core Features Implemented

### 1. Wake Word Activation

* Activated using wake words like “Jarvis” or “Rover”
* Uses **Vosk** for offline speech recognition

### 2. Facial Recognition

* Identifies elder using recognize\_face()
* Ensures reminders and medications are personalized

### 3. Reminder System

**Supports:**

* One-time reminders
* Daily recurring reminders
* Spoken commands like:
  + “Remind me to walk at 4 PM”
  + “Remember me to take medicine at 8 AM daily”

**File Used:** custom\_reminders.json

* Reminder fields: name, task, time, type (“once” or “daily”), done

**Voice Handling:**

* User is prompted for task and time if incomplete
* Daily/once type is selected interactively

### 4. Reminder Triggering

* Runs in a background thread
* Checks reminders every 30 seconds
* If a reminder is due:
  + Announces: “Sorry for interrupting you. You have a reminder to…”
  + One-time reminders are marked as done: true
  + Daily ones are preserved

### 5. Reminder Listing & Management

* Voice command: “What are my reminders?”
* Robot responds with a numbered list of reminders
* Follows up: “Do you want to modify or delete one? Say the number.”
* Users can:
  + Modify reminder task/time/type
  + Delete by number

### 6. Medication Reminder

* Users can say:
  + “Add medication”
  + “Remove medication”
  + “What is my medication schedule?”
* Medication schedules stored separately

### 7. Sleep Alarm

* Wake-up requests like: “Wake me up at 7:30 AM”
* Robot sets and monitors sleep alarms

## Reminder Data Example (custom\_reminders.json)

[  
 {  
 "name": "hady",  
 "task": "take medicine",  
 "time": "03:00 PM",  
 "type": "once",  
 "done": false  
 },  
 {  
 "name": "hady",  
 "task": "walk outside",  
 "time": "04:00 PM",  
 "type": "daily",  
 "done": false  
 }  
]

## Testing Script: testReminder.py

* Creates a reminder for 1 minute in the future
* Starts background thread
* Confirms reminder is triggered with debug logs

## Error Handling

* load\_reminders() gracefully handles corrupted or empty JSON
* Reminder time format must be “%I:%M %p” (e.g., “03:45 PM”)

## Next Possible Enhancements

* Weekly or custom interval reminders
* Logging reminder history
* Integration with emergency contacts or alert systems
* Web dashboard for caregivers

## Current Status

✅ Wake word & face recognition working ✅ Reminders triggered correctly ✅ Daily & once reminders implemented ✅ Voice commands: create, list, modify, delete reminders ✅ Background reminder thread active

## Authors & Contributors

* User: Project Leader, Integrator
* ChatGPT (OpenAI): Code assistant, debugging, architecture