



Memory Training for Adults with Mild Cognitive Impairment using AR

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Mild Cognitive Impairment (MCI)

An early stage of memory decline that does not affect activities of daily living (ADLs)

There are two categories depending on the cognitive domain affected

1. Amnestic
2. Non-Amnestic

Causes

- Natural aging
- Head injuries
- Stress, anxiety, depression
- Medicine side effects
- Family history

Mild Cognitive Impairment (MCI)

Statistics

- 23% of people aged 60 or older are living with MCI
- 10% - 15% progress to dementia annually
- 1.4 billion people will be 60+ by 2030



Problem

Traditional Memory Training

- Paper based tasks
 - Puzzles, word games, etc.
- Lack of physical activity
- Repetitive

Existing Research

- Mostly generic, not tailored for MCI
- Few combine memory + physical activity

Need for interventions focusing on memory training combined with physical activity especially tailored for adults with MCI

Digital Interventions

Existing memory training interventions have three main goals

- Help healthy people prevent cognitive decline
- Provide a therapeutic tool to help people with cognitive impairments stay active and slow down the decline
- Provide users with information or assessment about their cognitive health and help them learn about different cognitive disorders

Therapeutic AR

- Augmented Reality (AR) is a technology that combines virtual and physical world by including computer-generated objects in the real world



Deep AI, Inc ©



Research Method

Objectives

Investigate how combining memory training with physical activity can help maintain memory function in older adults with MCI

- Literature and interviews

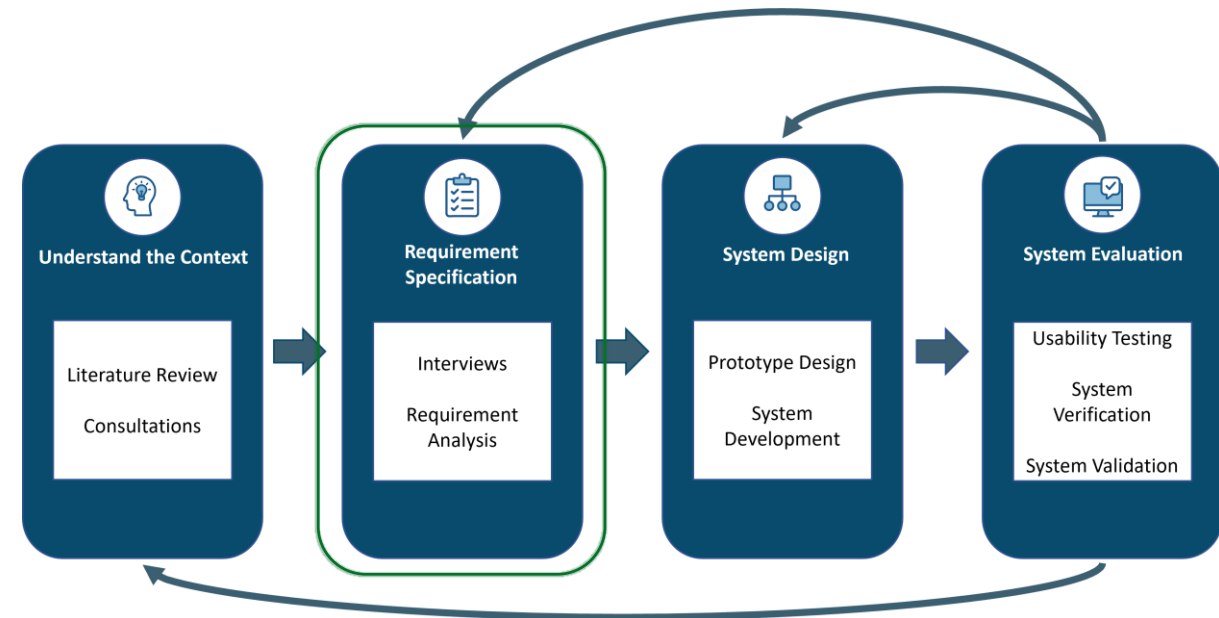
Design and develop an AR intervention that integrates both memory and physical engagement

- AR intervention following a User Centered Design approach

Evaluate the developed system

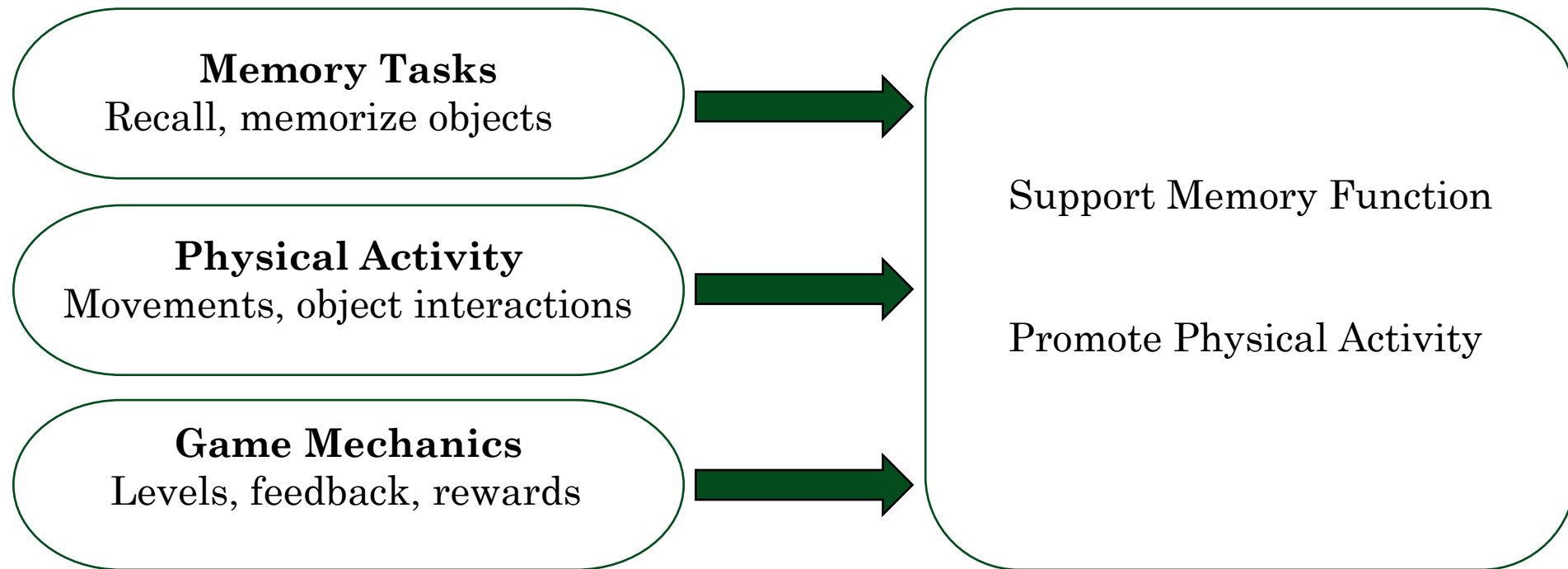
- Conduct user studies with adults with MCI

User Centered Design Approach



Proposed Solution

AR-based Memory Training for adults with MCI



Preliminary Results

- Literature review
- Consultations with experts
 - Combine memory training with physical activity → stronger cognitive benefits
- Ethics approval obtained for interviews with adults and professionals

Next Steps

- Conduct interviews and gather requirements for prototype
- Design and develop AR memory training intervention

Memory Training for Adults with Mild Cognitive Impairment using AR

- Many older adults live with Mild Cognitive Impairment (MCI)
- Combining memory training with physical activity provides cognitive benefits
- Traditional tools are limited and do not include physical activity
- AR offers an innovating way to support both memory and physical activity

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