MINDOLOG

Group Biber

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Agenda

- Problem & Solution
- Motivation
- Specific Features of the System
- Demo Video
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Problem & Solution

- Brain Waves Based Psychological Rehabilitation
  - By using neuro-feedbacks provided from Brain Computer Interface Devices (BCID).
Problem & Solution

- Attention Deficiency
  - A game environment
  - Interacts with the user’s brain waves
  - Proceeds according to a psychological test
  - Can be played over scheduled sessions
Agenda

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Motivation

Patient
Software
Psycgologist
Motivation

Computer Science + Another Profession → Our Product
Agenda

- Problem & Solution
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Features

- Login
- Psychologist
- Patient
- Patient Information
- Compare Patients
- Play Game
- View History
Patient Management: Registration, List, Update, Delete, etc.

Features - Psychologist
Features - Psychologist

View / Compare the Progress of the Patients Graphically
Features - Patient

See History
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- **Specific Features of the System**
- Demo Video
Background Information

Cognitive Property: Brain waves are input to the game.

Monitoring Property: Brain waves are output from the game.
The Game

User plays the game

Game causes brain waves to change

Changing brain waves affects the behavior of the game

User’s attention level changes according to the feedback

Feedback from the game and dynamic charts
The Game

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• Monitoring Property

• N-Back Memory Test:
  - Remember a sequence of letters
  - Follow the sequence
  - Length of the sequence = level
- **Cognitive Property**
- **Brain waves:**
  - High-level
  - Middle-level
  - Low-level
- **Changing part: Speed of the car**
  - Low-level: increase speed
  - Higher levels: decrease speed
Speed = 21.30 km/h
Total Hits: 15
Total Misses: 14
Frames per second: 162
The Game

- Another cognitive method:
  - Transparency of the letters
  - Low-level: Transparency increases
  - Higher levels: Opaque increases
- Every user has different middle-level
  - Initial test before playing game
- Level = length of the sequence to be remembered
- Above a HIT / MISS rate = pass the current level
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