VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

EXTENSION PACK FOR ALFA PLATFORM

2025.1

WHAT IS NEEDED?

Please make sure the PC where you want this module to be active have VAST.Rehab Patient Panel installed and that the following hardware requirements are met:

- Windows 10/11
- Intel Core i5 (8th gen or newer). Important: Avoid ultra-low-power versions (e.g., i5-8250U), as they may not meet performance requirements. Prefer standard or high-performance CPUs.
- Minimum: 8 GB RAM (16 GB or more recommended for optimal performance).
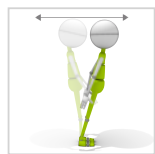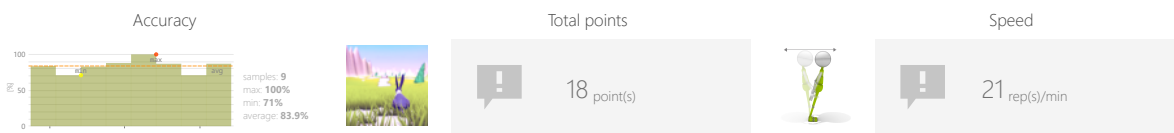
VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

SPEED
RABBIT

Measure number of repetitions of specific movement pattern an individual is able to perform within predefined time interval.

CONTROL MODES

RESULTS

Accuracy		Total points		Speed
samples: **9** max: **100%** min: **71%** average: **83.9%**		18 point(s)		21 rep(s)/min

ADJUSTMENTS

• Feet position

• Task duration

• Range

OBJECTIVES

• Speed of movement

• Repetitive movements

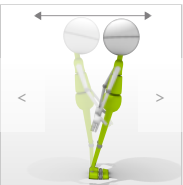## INSTRUCTION FOR PATIENT

Go through the entire route as fast as you can.

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SPEED
RABBIT

SAMPLE SETTINGS

Feet

Any position

Duration

90s

Range

30% ↕ 60%

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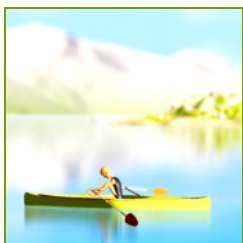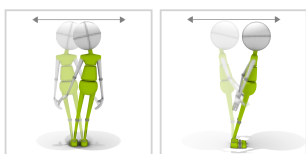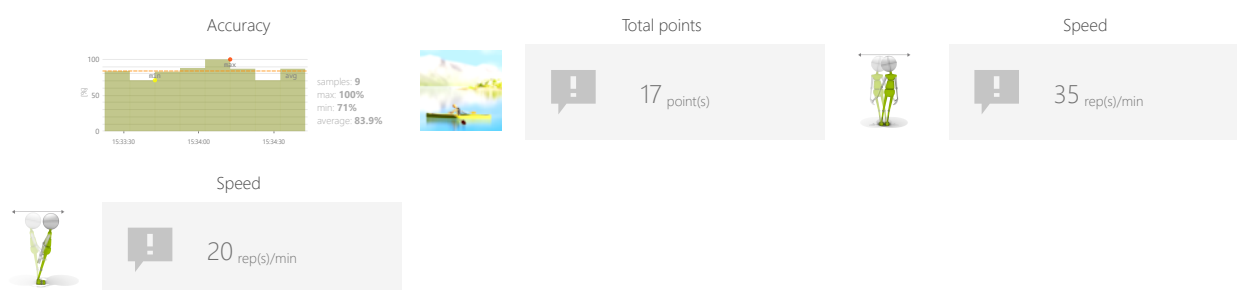
SPEED
KAYAK

Measure number of repetitions of specific movement pattern an individual is able to perform within predefined time interval.

CONTROL MODES

RESULTS

Accuracy

samples: **9**
max: **100%**
min: **71%**
average: **83.9%**

Total points

17 point(s)

Speed

35 rep(s)/min

Speed

20 rep(s)/min

ADJUSTMENTS

• Feet position
• Task duration
• Range

OBJECTIVES

• Speed of movement
• Repetitive movements

INSTRUCTION FOR PATIENT

Row as fast as you can.

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SPEED
KAYAK

SAMPLE SETTINGS

Feet

Any position

Duration

90s

Range

30% ↔ 70%

VAST.Rehab
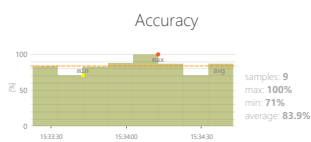REHABILITATION IN VIRTUAL REALITY

MOVEMENT PRECISION
UMBRELLA

Measure and train individual's skills to perform specific movement patterns with predefined speed and range.

CONTROL MODES

RESULTS

Accuracy

samples: **9**
max: **100%**
min: **71%**
average: **83.9%**

Total points

! 32 point(s)

Movement precision

! 16 %

ADJUSTMENTS

• Feet position
• Task duration
• Path
• Range
• Umbrella size

OBJECTIVES

• Movement precision
• Visual motor coordination

INSTRUCTION FOR PATIENT

Don't let the hippo get wet - keep the umbrella above him!

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REHABILITATION IN VIRTUAL REALITY

MOVEMENT PRECISION
UMBRELLA

SAMPLE SETTINGS

Difficulty
1/3

Feet
Any position

Duration
60s

Path
: 8.0s

Range
30% ↔ 70%

Umbrella size
150%

VAST.Rehab
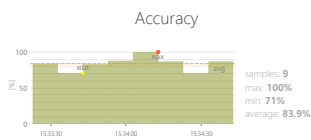REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
CANNON

Measure and train individual's skills to perform movements based on real-world situational biomechanics. They usually involve multi-planar, multi-joint movements which place demand on the body's core musculature and innervation.

CONTROL MODES

RESULTS

Accuracy	Total points	Functional movements
samples: **9** max: **100%** min: **71%** average: **83.9%**	22 point(s)	23 %

ADJUSTMENTS

• Feet position
• Task duration
• Range
• Time between cannonballs
• Time between enemies
• Enemies speed

OBJECTIVES

• Planning and Strategy
• Movement precision
• Predicting the trajectory of objects

INSTRUCTION FOR PATIENT

Use the cannon(s) to shoot into the robots coming in your direction.

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REHABILITATION IN VIRTUAL REALITY

SAMPLE SETTINGS

Difficulty	
◀	1/3	▶

Feet	Duration
Any position	90s

Range	Time between cannonballs
70% / 40% / 30% ↔ 70%	2s
	Time between enemies
	4s

Enemies speed	
50%	

Difficulty	
◀	custom	▶

Feet	Duration
Any position	90s

Range	Time between cannonballs
70% / 40% / 30% ↔ 70%	2s
	Time between enemies
	4s

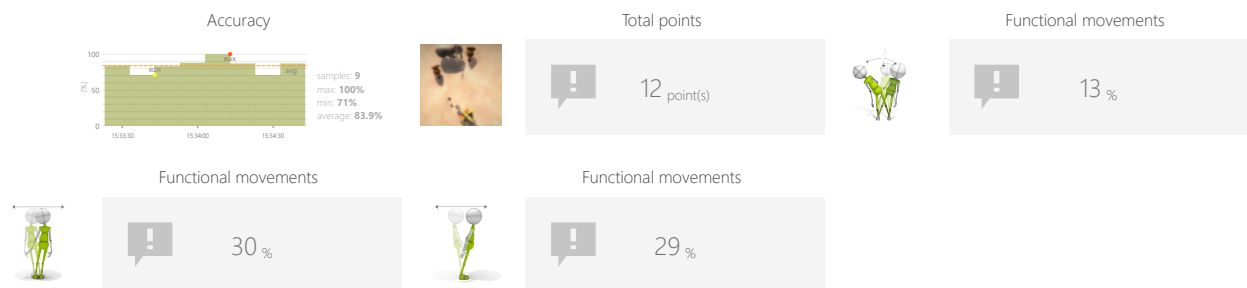| Enemies speed	
100%	

FUNCTIONAL MOVEMENTS
AUTOMATIC CANNON

Measure and train individual's skills to perform movements based on real-world situational biomechanics. They usually involve multi-planar, multi-joint movements which place demand on the body's core musculature and innervation.

CONTROL MODES

RESULTS

Accuracy

samples: **9**
max: **100%**
min: **71%**
average: **83.9%**

Total points

12 point(s)

Functional movements

13 %

Functional movements

30 %

Functional movements

29 %

ADJUSTMENTS

• Feet position
• Task duration
• Range
• Enable distractors
• Time between cannonballs
• Time between enemies
• Enemies speed

OBJECTIVES

• Divided attention
• Spontaneous movements
• Predicting the trajectory of objects
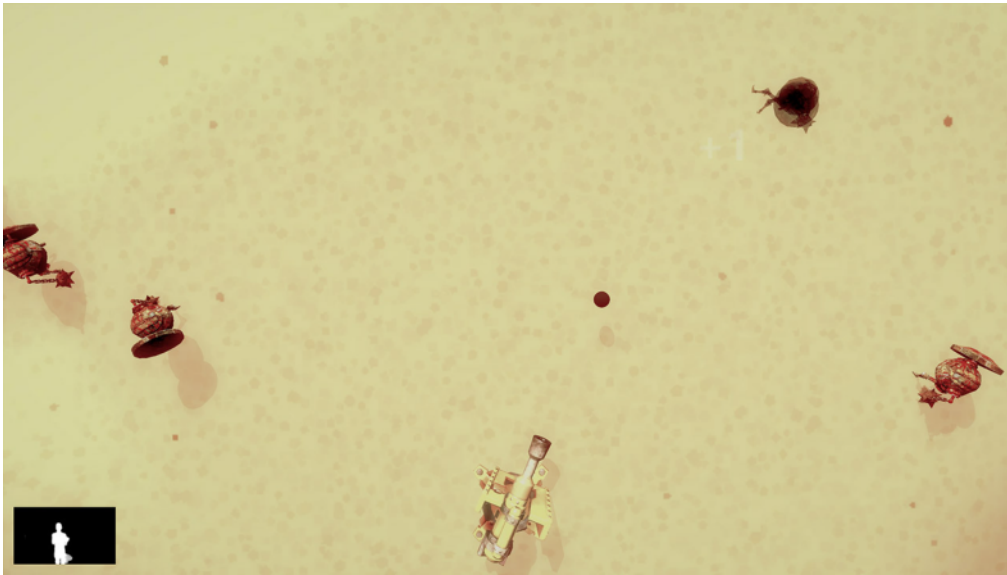
INSTRUCTION FOR PATIENT

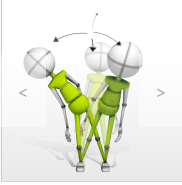Control cannon(s) to destroy robots, but avoid hitting the elephant!

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FUNCTIONAL MOVEMENTS
AUTOMATIC CANNON

SAMPLE SETTINGS

Difficulty ◀ **1/3** ▶

Feet	Duration
Any position	90s

Range	Enable distractors
70%	No
40%	Time between cannonballs
30% ↔ 70%	1s

Time between enemies	Enemies speed
3s	50%

Difficulty ◀ **custom** ▶

Feet	Duration
Any position	90s

Range	Enable distractors
70%	Yes
40%	Time between cannonballs
30% ↔ 70%	1s

Time between enemies	Enemies speed
3s	50%

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REHABILITATION IN VIRTUAL REALITY
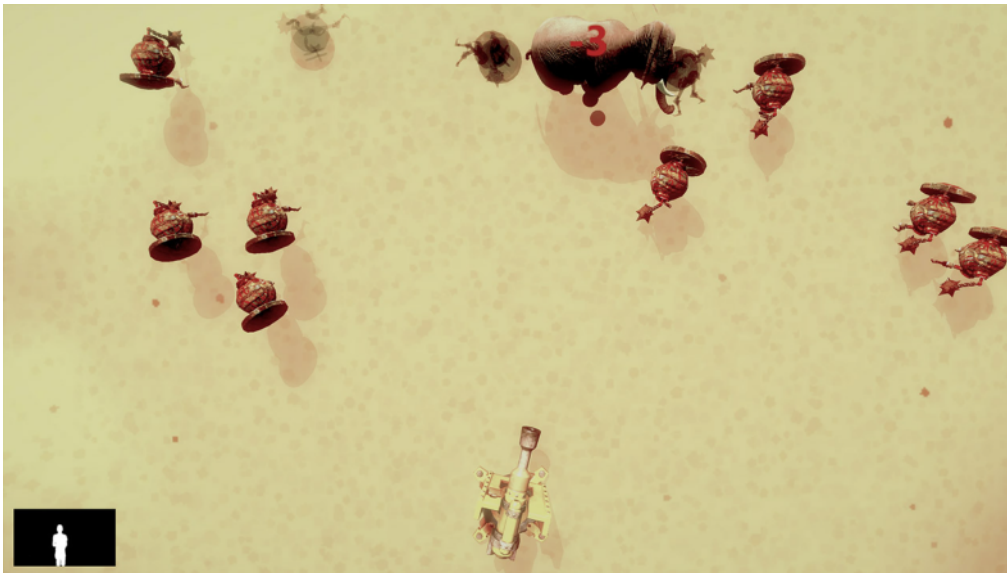
FUNCTIONAL MOVEMENTS
DRAGON

Measure and train individual's skills to perform movements based on real-world situational biomechanics. They usually involve multi-planar, multi-joint movements which place demand on the body's core musculature and innervation.
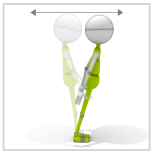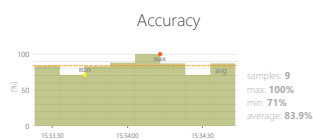
CONTROL MODES

RESULTS

Accuracy	Total points	Functional movements
samples: **9** max: **100%** min: **71%** average: **83.9%**	29 point(s)	38 %

ADJUSTMENTS

• Feet position

• Task duration

• Range

• Coins group size

• Distance between coins

• Gravity force

OBJECTIVES

• Predicting the trajectory of objects

• Improve range of motion

• Visual motor coordination

• Muscle strengthening

• Planning and Strategy

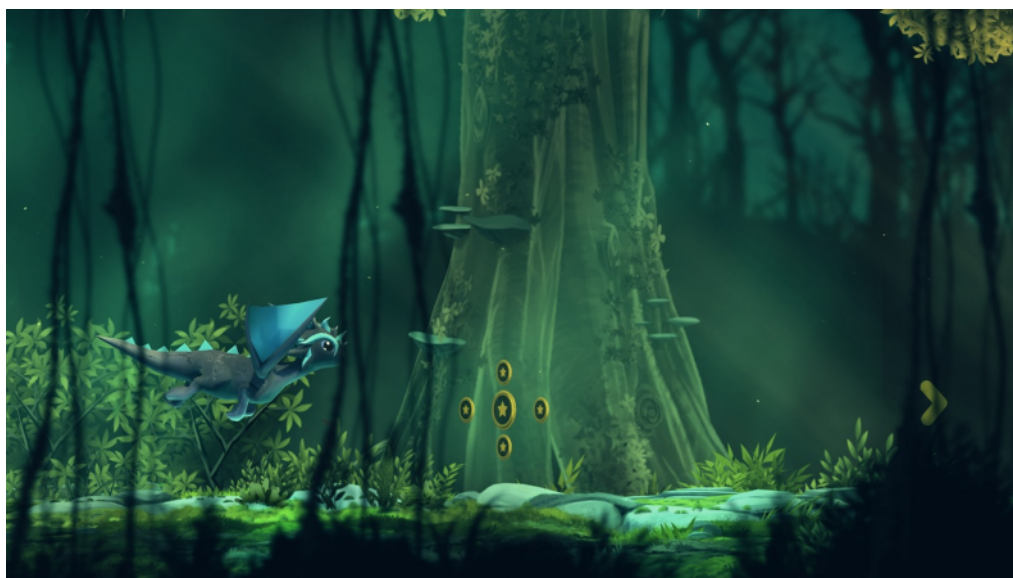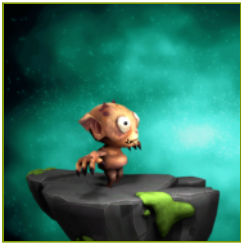## INSTRUCTION FOR PATIENT

Fly and collect the coins.

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REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
DRAGON

SAMPLE SETTINGS

Difficulty
custom

Feet	Duration
Any position	90s

Range	Coins group size
30% 60%	3
	Distance between coins
	250%

Gravity force
100%

Difficulty
1/3

Feet	Duration
Any position	90s

Range	Coins group size
30% 60%	5
	Distance between coins
	250%

Gravity force
100%

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY
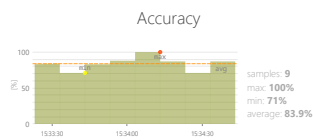
FUNCTIONAL MOVEMENTS
ROCKET JUMPING

Measure and train individual's skills to perform movements based on real-world situational biomechanics. They usually involve multi-planar, multi-joint movements which place demand on the body's core musculature and innervation.

CONTROL MODES

RESULTS

Accuracy	Total points	Functional movements
samples: **9** max: **100%** min: **71%** average: **83.9%**	22 point(s)	39 %

ADJUSTMENTS

• Feet position
• Task duration
• Range
• Time between objects
• Bomb format
• Speed of objects

OBJECTIVES

• Spontaneous movements
• Dynamic responses to emerging moving targets
• Predicting the trajectory of objects

INSTRUCTION FOR PATIENT

Help the creature jump over incoming rockets and avoid being hit.

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REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
ROCKET JUMPING

SAMPLE SETTINGS

Difficulty
1/3

Feet
Any position

Duration
90s

Range
30% 60%

Time between objects
5s

Bomb format
1

Speed of objects
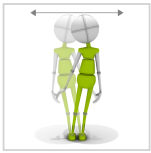100%

VAST.Rehab
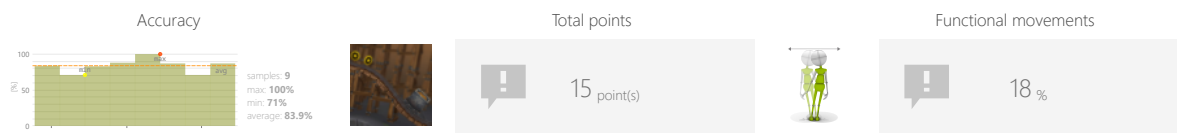REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
RAILS

Measure and train individual's skills to perform movements based on real-world situational biomechanics. They usually involve multi-planar, multi-joint movements which place demand on the body's core musculature and innervation.

CONTROL MODES

RESULTS

Accuracy	Total points	Functional movements
samples: **9** max: **100%** min: **71%** average: **83.9%**	15 point(s)	18 %

ADJUSTMENTS

• Speed

• Feet position

• Task duration

• Range

• Route shape

• Enable derailing

• Enable obstacles

• Time between objects

OBJECTIVES

• Dynamic responses to emerging moving targets

• Predicting the trajectory of objects

• Visual motor coordination
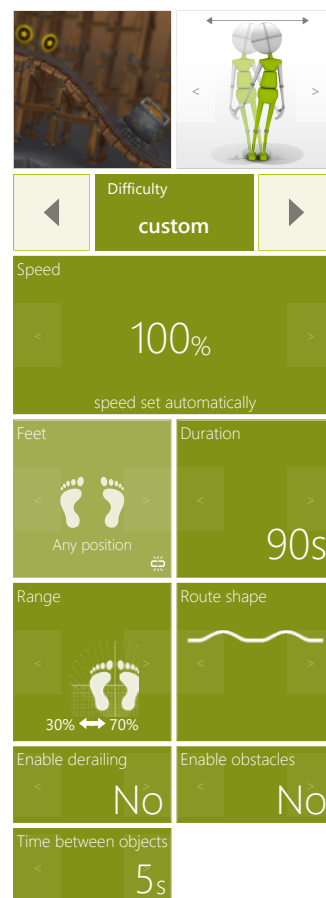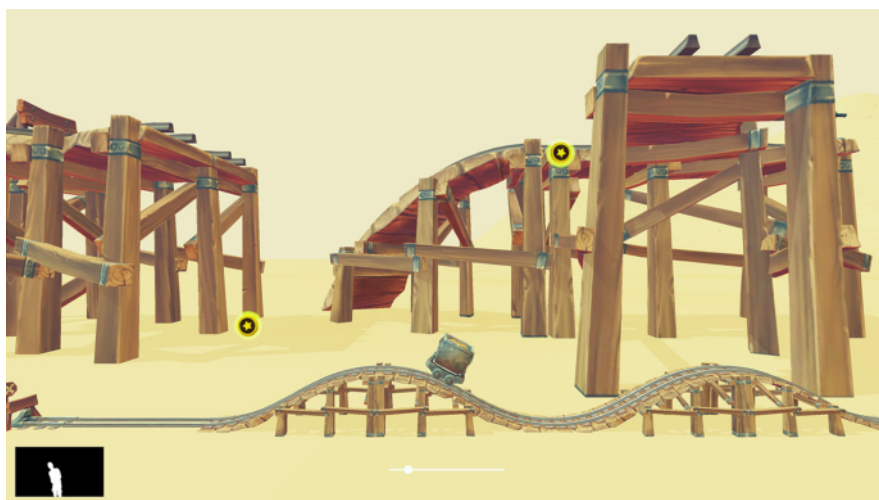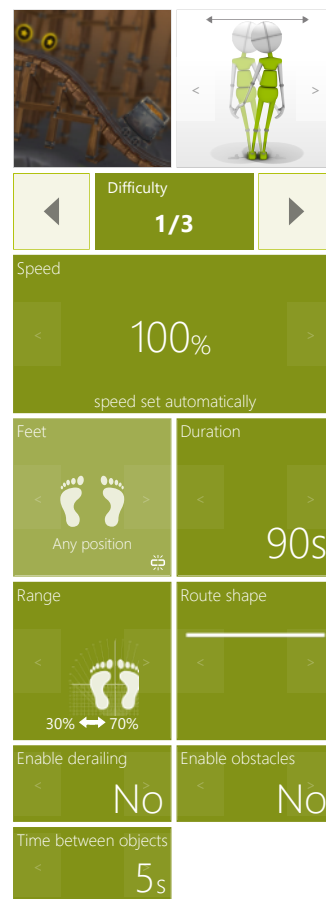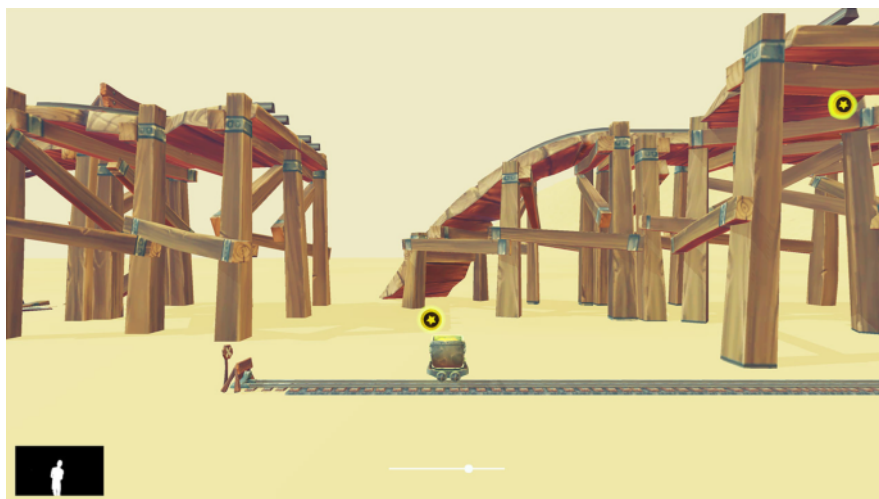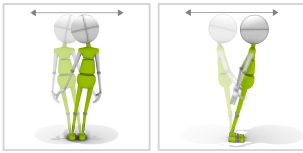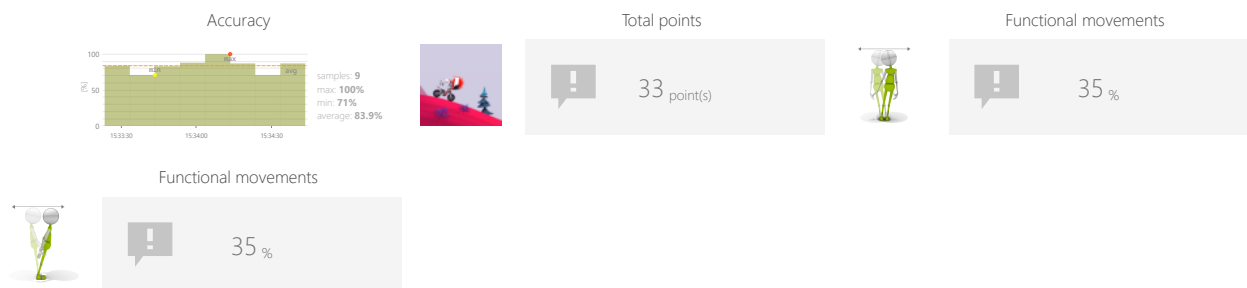
INSTRUCTION FOR PATIENT

Control the trolley to collect the coins.

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REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
RAILS

SAMPLE SETTINGS

Difficulty
◄ 1/3 ►

Speed
100%
speed set automatically

Feet

Any position

Duration
90s

Range
30% ⟷ 70%

Route shape
———

Enable derailing
No

Enable obstacles
No

Time between objects
5s

Difficulty
◄ custom ►

Speed
100%
speed set automatically

Feet

Any position

Duration
90s

Range
30% ⟷ 70%

Route shape
〜〜〜

Enable derailing
No

Enable obstacles
No

Time between objects
5s

VAST.Rehab
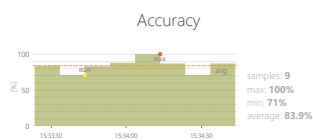REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
MOTOCROSS

Measure and train individual's skills to perform movements based on real-world situational biomechanics. They usually involve multi-planar, multi-joint movements which place demand on the body's core musculature and innervation.

CONTROL MODES

RESULTS

Accuracy

samples: **9**
max: **100%**
min: **71%**
average: **83.9%**

Total points

33 point(s)

Functional movements

35 %

Functional movements

35 %

ADJUSTMENTS

• Feet position
• Task duration
• Range
• Route shape

OBJECTIVES

• Dynamics of planned movements
• Planning and Strategy

INSTRUCTION FOR PATIENT

Accelerate and brake to cover the entire route as quickly as possible without tipping.

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REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
MOTOCROSS

SAMPLE SETTINGS

10.28s

Difficulty
◀ 1/3 ▶

Feet
Any position

Duration
90s

Range
30% ⬌ 70%

Route shape
Easy

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REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
FOREST RUNNER

Measure and train individual's skills to perform movements based on real-world situational biomechanics. They usually involve multi-planar, multi-joint movements which place demand on the body's core musculature and innervation.

CONTROL MODES

RESULTS

Accuracy	Total points	Functional movements
samples: **9** max: **100%** min: **71%** average: **83.9%**	36 point(s)	31 %

ADJUSTMENTS

• Speed

• Feet position

• Task duration

• Range

OBJECTIVES

• Dynamics of planned movements

• Focusing

• Planned movements

• Speed of movement

INSTRUCTION FOR PATIENT

Keep the hare on the run, avoid obstacles and collect as many carrots as you can.

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REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
FOREST RUNNER

SAMPLE SETTINGS

Difficulty
1/2

Speed
150%
speed set automatically

Feet
Any position

Duration
90s

Range
30% ⟷ 70%

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REHABILITATION IN VIRTUAL REALITY
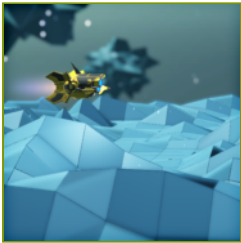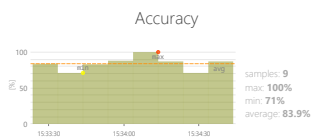
FUNCTIONAL MOVEMENTS
GEOMETRY FLIER

Measure and train individual's skills to perform movements based on real-world situational biomechanics. They usually involve multi-planar, multi-joint movements which place demand on the body's core musculature and innervation.

CONTROL MODES

RESULTS

Accuracy	Total points	Functional movements
samples: **9** max: **100%** min: **71%** average: **83.9%**	18 point(s)	21 %

ADJUSTMENTS

• Speed
• Feet position
• Task duration
• Range

OBJECTIVES

• Dynamics of planned movements
• Activity in a given rhythm
• Visual motor coordination
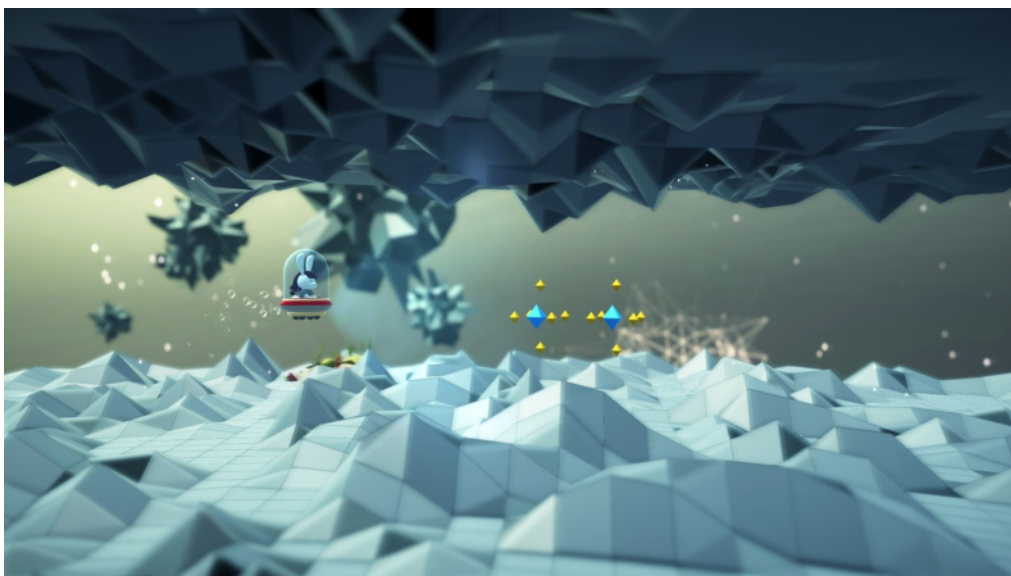
INSTRUCTION FOR PATIENT
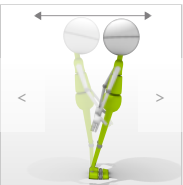
Control the vehicle to avoid the obstacles.

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REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
GEOMETRY FLIER

SAMPLE SETTINGS

Difficulty
1/3

Speed
100%
speed set automatically

Feet

Any position

Duration
90s

Range
30% ↕ 60%

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY
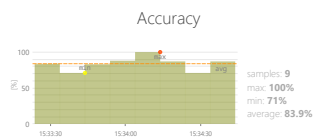
FUNCTIONAL MOVEMENTS
DANCEMAN

Measure and train individual's skills to perform movements based on real-world situational biomechanics. They usually involve multi-planar, multi-joint movements which place demand on the body's core musculature and innervation.

CONTROL MODES

RESULTS

Accuracy	Total points	Functional movements
samples: **9** max: **100%** min: **71%** average: **83.9%**	14 point(s)	31 %

ADJUSTMENTS

• Feet position
• Task duration
• Range
• Advanced scoring
• Song index
• Spawn rate level

OBJECTIVES

• Activity in a given rhythm
• Spontaneous movements
• Visual motor coordination

INSTRUCTION FOR PATIENT

Hit the green characters when they come close.

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REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
DANCEMAN

SAMPLE SETTINGS

Difficulty
1/6

Feet
Any position

Duration
90s

Range
30% ⟷ 70%

Advanced scoring
No

Song index
0

Spawn rate level
Easy

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REHABILITATION IN VIRTUAL REALITY
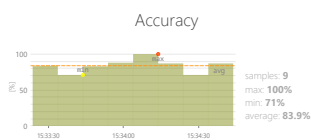
PROBLEM SOLVING
MAZE

Measure and train individual's skills to reach a solution of specific problems. Problem solving may include mathematical or systematic operations and can be a gauge of an individual's critical thinking skills.

CONTROL MODES

RESULTS

Accuracy	Total points	Problem solving
samples: **9** max: **100%** min: **71%** average: **83.9%**	30 point(s)	17 %

ADJUSTMENTS

• Feet position
• Task duration
• Range
• Show path
• Maze size

OBJECTIVES

• Logical tasks
• Planned movements
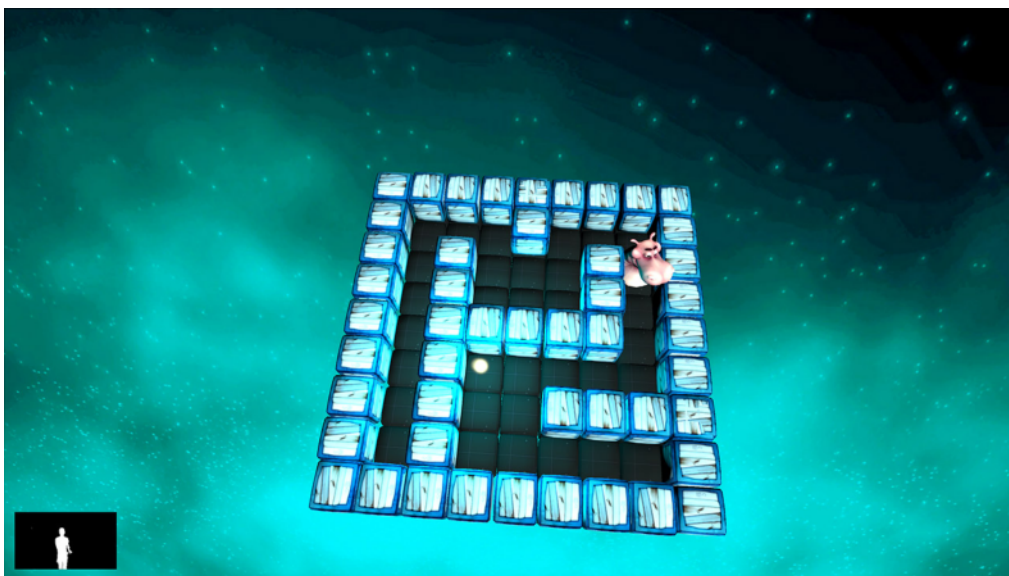• Planning and Strategy

INSTRUCTION FOR PATIENT

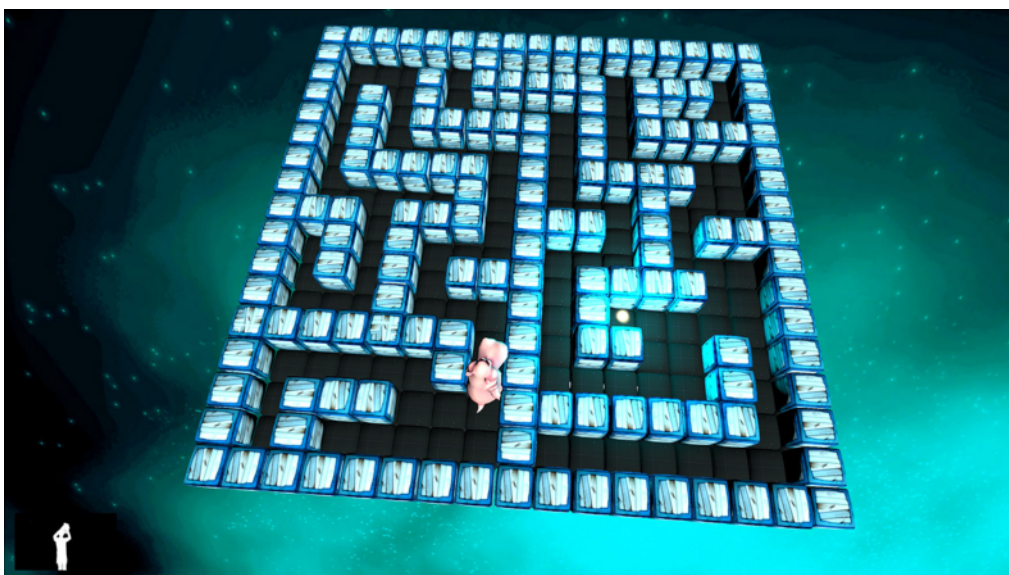Lead the hippo through the maze to the glowing target.

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REHABILITATION IN VIRTUAL REALITY

PROBLEM SOLVING
MAZE

SAMPLE SETTINGS

Difficulty 1/4

Feet	Duration
Any position	90s

Range	Show path
60% 40% 30% ↔ 70%	No
	Maze size
	4

Difficulty 4/4

Feet	Duration
Any position	90s

Range	Show path
60% 40% 30% ↔ 70%	No
	Maze size
	10

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