

Rehab Solutions Brochure

About Fourier Rehab

Fourier Rehab, a division of Fourier (formerly Fourier Intelligence), is a technology-driven company specializing in the development of exoskeletons and rehabilitation robotics.

To leverage full-stack robotics technology to enrich people's lives.

Guided by cutting-edge technology and a shared purpose, aiming to enhance rehabilitative care and help individuals regain their independence and quality of life.

The pioneering member representing rehabilitation robotics in the International Federation of Robotics (IFR).

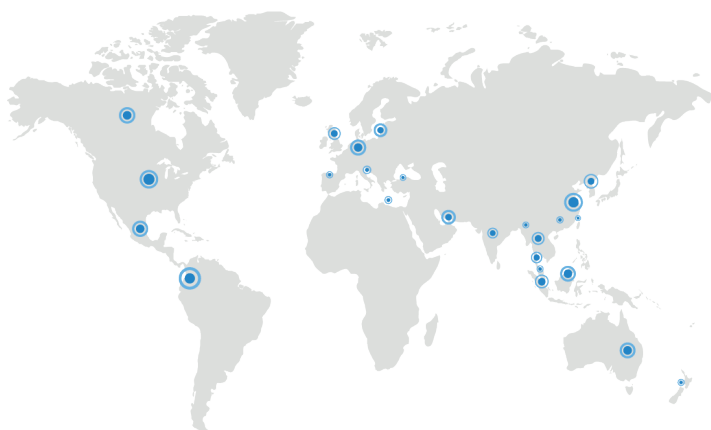
More than 10,000+ installations in more than 64 countries in the world.

Secured the financing from top-tier investors in Series E Funding, led by SoftBank Vision Fund 2 and backed by the Saudi Aramco P7 Venture Fund and the Yuanjing Capital.

More than 20 international research partners.

Some of such initiatives are joint research laboratories, respectively, with the Shirley Ryan AbilityLab (formerly known as the Rehabilitation Institute of Chicago) in the United States, ETH Zürich in Switzerland, Nanyang Technological University in Singapore, and the KITE Research Institute at the Toronto Rehabilitation Institute in Canada.

Academic exchange and research collaboration with more than 100 top hospitals and rehabilitation centres worldwide to share resources and cultivate talents in rehabilitation medicine and engineering.



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Fourier Rehab Rehabilitation Equipment

World-leading Force-feedback Technology
Designed to Support All Stages of Rehabilitation

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Introduction to RehabHub™

- RehabHub™
- Fourier Rehab Rehabilitation Equipment
- World-leading Force-feedback Technology
Designed to Support All Stages of Rehabilitation
- Immersive Interactive Experience
- Measurable Training



01

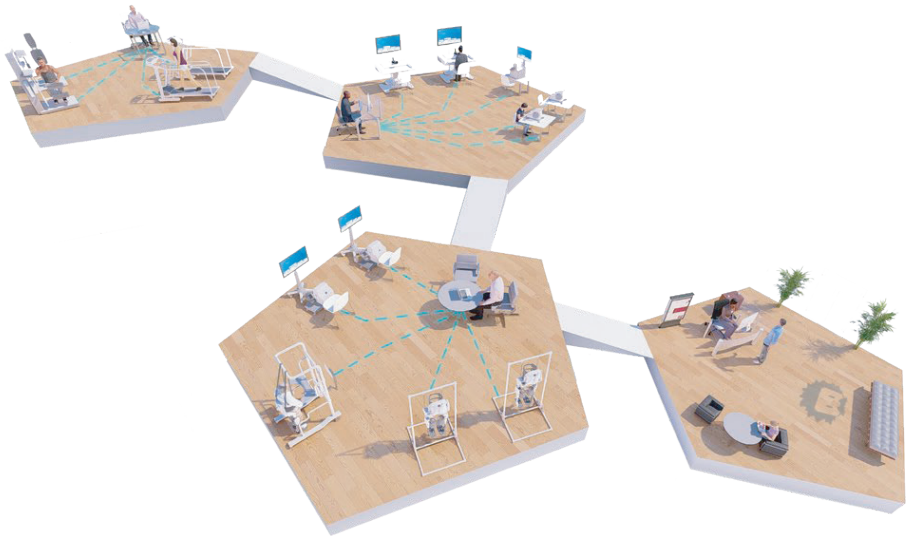




RenabHub™

RehabHub™ by Fourier Rehab

The RehabHub™ is a one-stop solution with comprehensive, advanced rehabilitation technology, including robotics therapy, sensor technology, and virtual reality. The principle of RehabHub™ technology is to provide high-efficiency rehabilitation training, cost-effective therapy outcomes, and emphasize space-saving and ease of use. A fully digitized training environment reduces physical therapists' labor-intensive work so they can focus on diagnoses, therapy planning, and dexterous manual therapy. The RehabHub™ also allows an institution to standardize services, improve technologies, modernize business and eventually drive the whole industry by setting a new benchmark.



Fourier Rehab Rehabilitation Equipment

The RehabHub™ comprises rehabilitation equipment designated for upper and lower limbs, movement, and balance training. This equipment complements each other and offers a complete solution to a rehabilitation center to improve efficiency by reducing the labor of extensive manual therapy. One therapist can now monitor multiple patients simultaneously as all the devices are linked, replacing the traditional one-to-one training.

Covers the Whole Continuum of Rehabilitation

Provide assistance according to different training requirements, user's muscle power and conditions.

Abundant Therapies

Professional and personalized therapy including motor control, muscle strength and cognitive training.

Digitized Training

Analyze every movement precisely and generate a report after training.

Quick Setup

User-friendly design requires only 1 minute to set up and efficient enough to train 15 patients daily.



World-leading Force-feedback Technology Designed to Support All Stages of Rehabilitation

Force feedback is a core RehabHub™ technology that mimics a therapist's hand to guide movement. It provides assist-as-needed support in early rehab and gradually reduces help or adds resistance as the user improves. This adaptive control ensures correct motion, active participation, and effective training through every stage of rehabilitation.



Passive Mode

(0 MMT Score)

Improve ROM



Assistive Mode

(1-2 MMT Score)

Induce active participation



Active Mode

(3 MMT Score)

Optimize motor control



Resistive Mode

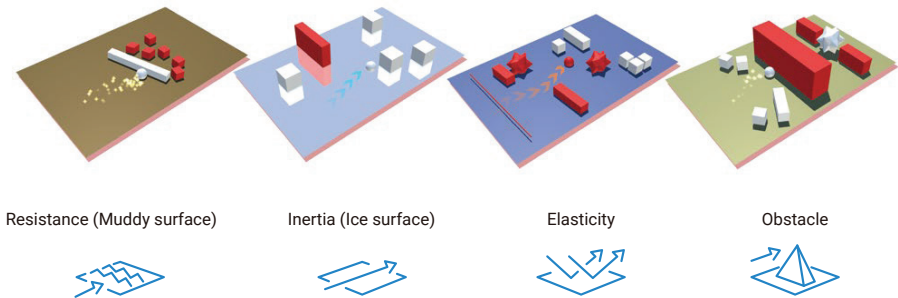
(4-5 MMT Score)

Improve muscle strength

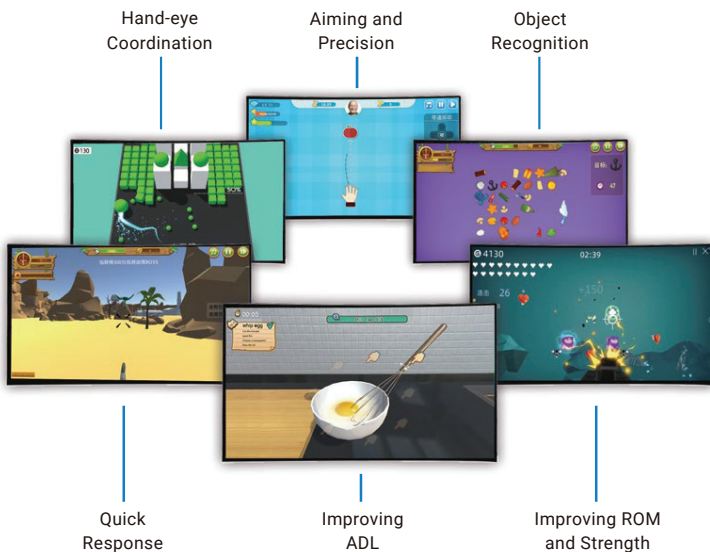


Immersive Interactive Experience

The in-house developed main motion control unit (MMU) is integrated into Fourier devices, enabling them to simulate various resistances, inertia, elasticity, and obstacles. This realistic training scenario, which combines visual, audio, and kinesthetic inputs, enhances the user experience to the next level.



All training modes include diverse gaming scenarios designed to motivate active user participation. This approach helps overcome the stereotype of tedious rehabilitation procedures by allowing users to engage in professional rehabilitation through gaming.



Measurable Training

Fourier Rehab's equipment is equipped with force and position sensors to precisely measure every movement. The device can assess a user's performance across multiple aspects, including range of motion (ROM), strength, cognition, and response time. All these analyzes and training reports are crucial for achieving optimal training outcomes.

Based on the user's assessment and past training performance, the system recommends training parameters. Auto-generated training reports provide measurable results for the user's reference.



RehabHub™ Devices

- ArmMotus™ EMU
- ArmMotus™ M2 Pro
- WristMotus™
- OTParvos™ Pro
- OTParvos™
- ExoMotus™ M4
- ExoMotus™ M4 Immersive
- AnkleMotus™
- DualMotus™
- CycleMotus™ Series
- CycleMotus™ A4 Immersive
- ImmersiveMotus™ Series
- PelmaMotus™

ArmMotus™ EMU

3D Upper Limb Rehabilitation Equipment

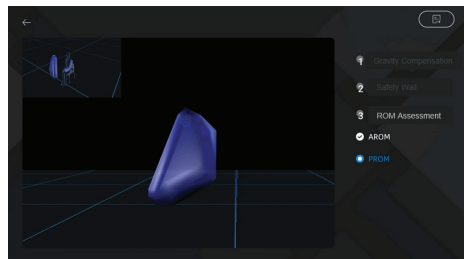
ArmMotus™ EMU is a 3D back-drivable upper limb rehabilitation device that utilizes an innovative cable-driven mechanism combined with a parallel structure made of lightweight carbon fiber rods. This design effectively reduces device friction and inertia, allowing the control system to respond and execute tasks more efficiently. As a result, it enhances compliance in human-machine interaction.



3D Training ROM

Diversified Training Environment and Large ROM

Real-time rendering of the user's ROM makes training easier to visualize and understand.





Awards Received



reddot winner 2022

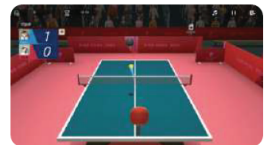
The device can simulate various force environments that are integrated into the training, enhancing its interest, immersion, and motivation. Real-time visual, audio, and haptic feedback diversify the training experience and provide intuitive guidance to users.



Motor Control



ADL Training



Reaction Training



ROM Training



Strength Training



Bilateral Training

Compliant Motion Control Support All Training Modes

ArmMotus™ EMU facilitates easy training setup in sitting and standing positions and accommodates various training arms. It integrates different scenarios within the game so users can train for strength, motor control, and joint range of motion in a single session, enhancing the overall efficiency of the rehabilitation process.



Gravity Compensation



Large Controllable Force



Combining Actual Object



Bilateral Training

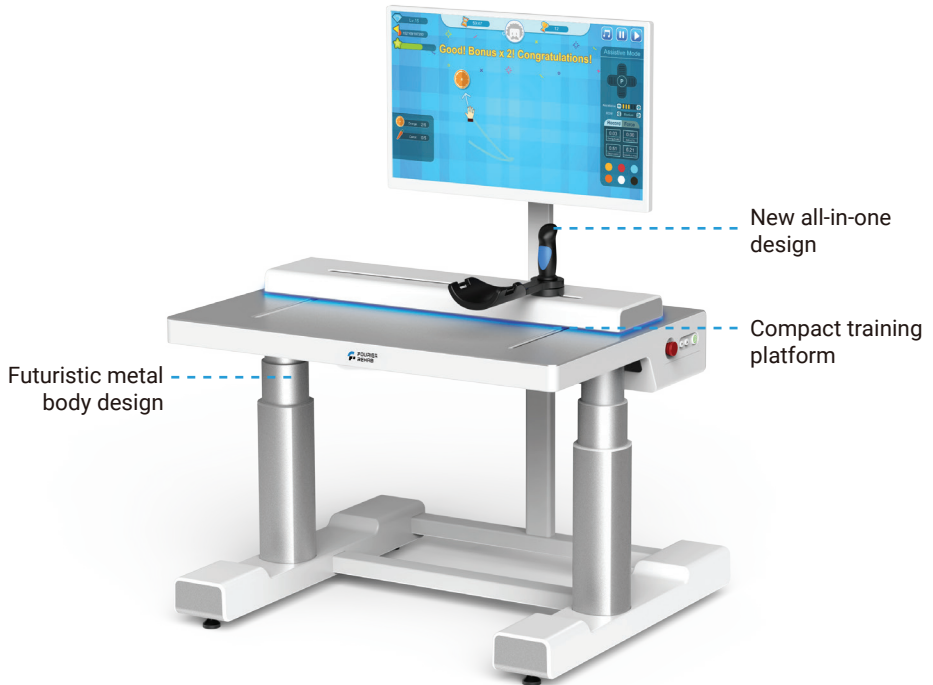




ArmMotus™ M2 Pro

Upper Limb Rehabilitation Equipment

ArmMotus™ M2 Pro incorporates all of Fourier Rehab's core technology to ensure an excellent user experience. ArmMotus™ M2 Pro covers the entire continuum of rehabilitation by offering a wide range of training scenarios. It is easy to operate and cost-effective, making it suitable for any hospital and rehabilitation center.



Multifunctionality

The multifunctional capabilities of ArmMotus™ M2 Pro enable limitless possibilities in training. For instance, motor control can be combined with cognitive training, isometric strength can be integrated with dynamic strength training, single-joint exercises can be aligned with activities of daily living (ADL) training, and unilateral exercises can be paired with bilateral arm training.



Motor control training

Improve motor control ability through targeted training.



Cognitive training

Improve user's cognition with perception, attention, memory training.



Isometric training

Induce power from early stage through isometric training.



Dynamic training

Improves movement control, strength, and overall functional mobility.



Single joint training

Improve the ROM of the user's scapula, shoulder joint and elbow joint through muscle tension control training.

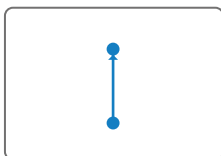
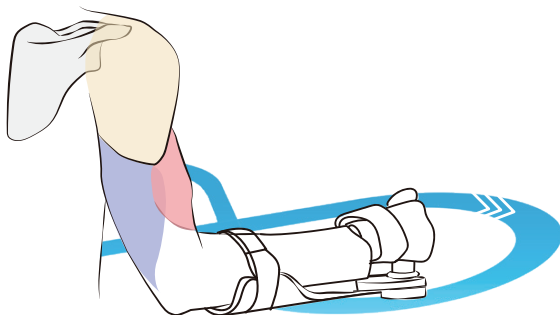


Compound functional training

Improve the balance function with ADL training.

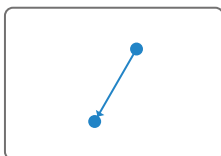
Personalized Therapy

ArmMotus™ M2 Pro offers a wide range of therapies for upper limb functions. Therapists can customize the training trajectory to tailor targeted therapies based on the patient's training outcomes and specific needs.



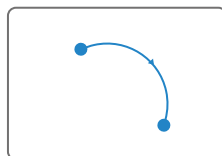
Protraction and Retraction of Scapula

Early prevention of abnormal movement patterns



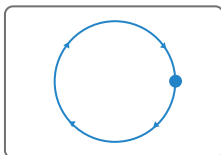
Flexion and Extension of Elbow Joint

Improve ADL movement



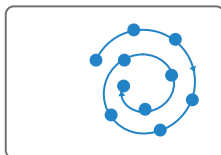
Internal and External Rotation of Shoulder Joint

Overcome synergistic movement



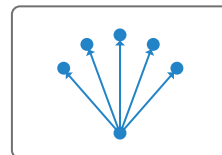
Range of Motion Training

Improve the ROM



Unilateral Neglect Training

Increase the sensory input from the neglected side



Balance Training

Improve balance during sitting and standing

At Your Service

"The M2 by Fourier Rehab is one of the robotics devices we use in the neuro-rehabilitation program at Barrow Neurological Institute. This device provides the therapists with an intuitive person machine interface to deliver therapeutic tasks in with minimal set up time which allows for more time to deliver an efficient patient treatment."

—Trent Maruyama, Program Manager for Rehabilitation Technology,
Barrow Neurological Institute, USA

"It has been fantastic having the Fourier M2 robot at Hobbs, we have all enjoyed using this piece of technology with our patients as part of their inpatient and outpatient therapy programmes."

—Joe Green, Technology Lead, Hobbs Rehabilitation, UK



WristMotus™

Wrist Joint Rehabilitation Equipment

WristMotus™ focuses on wrist functions through training that mimics activities of daily living (ADL). This includes forearm pronation and supination, ulnar and radial deviation, as well as flexion and extension exercises. It complements ArmMotus™, providing a comprehensive solution for upper limb rehabilitation.



Accessories for Different Functions

The variety of accessories can meet different requirements of the patients. A therapist can select a suitable accessory according to user's need and training outcome.



① Wrist flexion and extension

② Doorknob

③ Radial and ulnar deviation

④ Knob turning

⑤ Forearm pronation and supination



OTParvos™ Pro

Digital OT Assessment and Training System

The Digital OT Assessment and Training System is a touchscreen-based interactive platform that leverages virtual scene interaction technology. It integrates multi-sensory training including visual, auditory, and tactile feedback to provide comprehensive assessment and training for cognitive function and upper-limb motor function through rich and engaging content.

Touchscreen Interface

High-definition interactive platform for immersive engagement.



Height-Adjustable

Supports both seated and standing use for diverse patient mobility levels.

Mobile Base

Lockable castors for seamless integration into any clinical or ward setting.

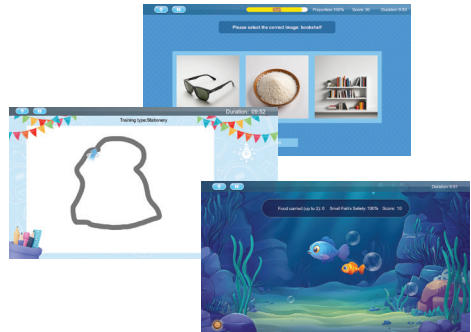
Integrated Cognitive & Motor Training

Cognitive Domains

Matching, categorization, comparison, color and image recognition, numerical concepts.

Motor Domains

Upper-limb motor control and hand-eye coordination.



Adaptive & Progressive Training

Designed for all functional levels, the system features adjustable exercise difficulty and a wide range of tasks. Intelligent performance tracking adapts difficulty in real time to support safe, progressive rehabilitation, with clear visual reports that make improvements easy to understand at a glance.



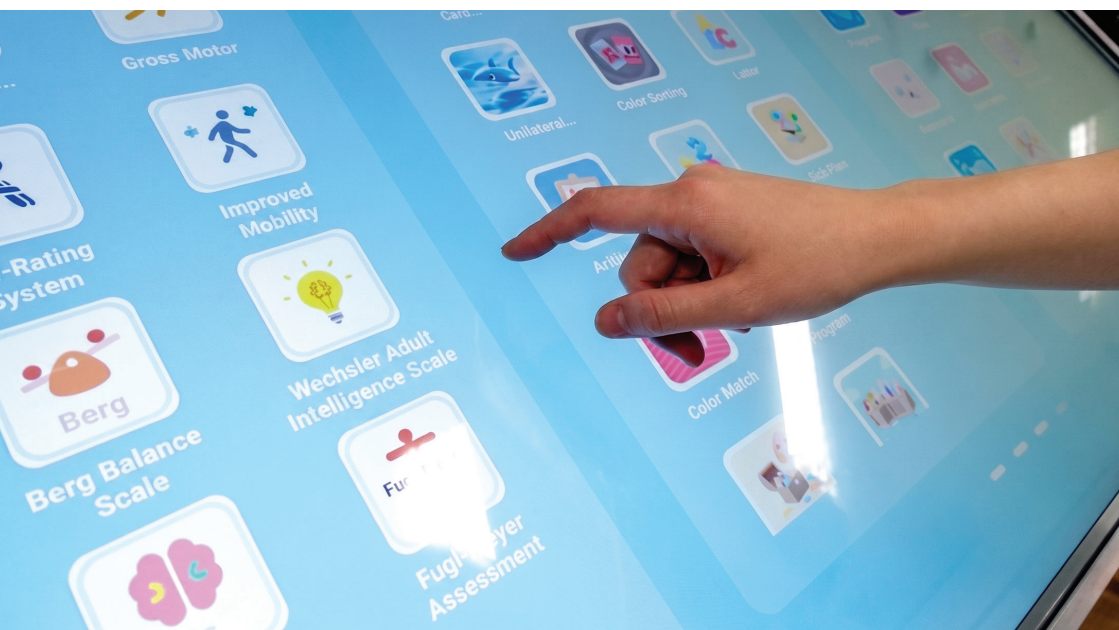
Customizable Difficulty



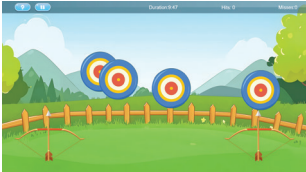
Adaptive Learning



Data Visualization



Enhances communication and collaboration skills through scenario-based training. Supports seated or standing use, with single-player or two-players interactive modes that strengthen teamwork, competitive awareness, and overall cognitive abilities.



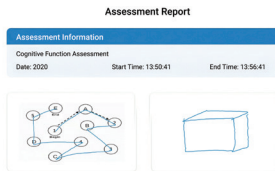
Two-Players Interactive Training

Enhances cognitive abilities and engagement through cooperation and competition.



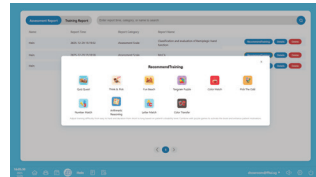
Intelligent Assessment & Management

Offers a series of recognized assessment scales for adults and children, with automated visual reports and intelligent training recommendations, enabling fast, paperless, and efficient assessments.



Visualized Reports

Automatically generates clear visual reports after assessment, with no manual calculation required.



Smart Training Recommendations

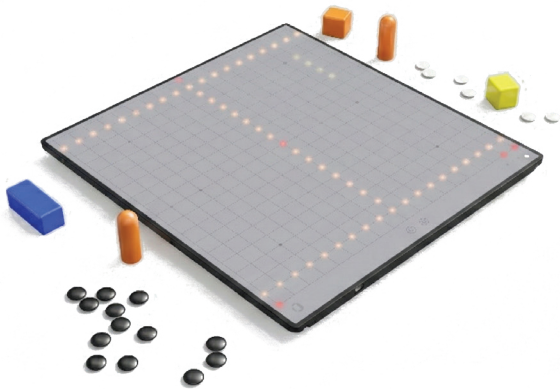
Targeted programs are automatically suggested based on evaluation results.



OTParvos™

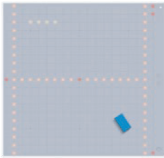
Digital OT Training System

OTParvos™ offers a portable intelligent solution for occupational therapy, utilizing electromagnetic sensors, LED arrays, dynamic control algorithms, and AI. It motivates users during training with a variety of accessories and games aimed at enhancing upper limb motor control, fine motor skills in the fingers, hand-eye coordination, and cognitive abilities.



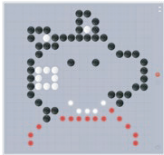
Multiple Training Types

OTParvos™ offers a wide-ranging library of interactive games designed to engage users in gamified training, enhancing multiple motor and cognitive functions.



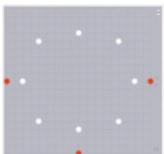
Pong

Improve hand-eye coordination and quick response ability.



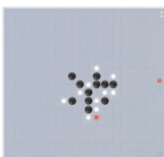
Puzzle

Practice attention, pattern recognition, and fine motor ability.



Trajectory

Improve motor control ability of upper limb based on task-oriented training.



Gomoku

Exercise upper limb movement ability and logical thinking.

Various Accessories Meet Various Training Needs

In addition to standard accessories, OTParvos™ can accommodate everyday items and traditional occupational training tools as accessories by attaching magnets, catering to various hand function training requirements.



Tip Pinch



Ball Grasp



Multiple-tip Pinch



Ball Pinch



Lateral Pinch



Cylindrical Grip



Wood Blocks



Wood Stick



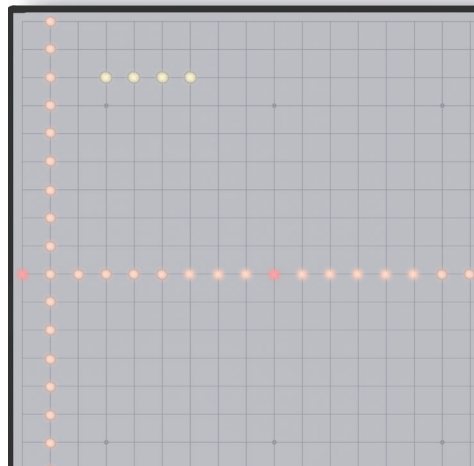
Magnet



Chess Piece



Mouse



Interactive Training Motivates Users

Through collaborative or competitive mechanisms, users can engage in diverse training scenarios involving human-machine and human-human interactions. This approach enhances users' enthusiasm and initiative during training.



Intuitive Interface

OTParvos™ is easy to set up with its intuitive interface. It features a 19x19 LED array training platform and indicator lights, making it user-friendly and capable of providing varied training experiences. Lightweight and portable, OTParvos™ can be conveniently transported anywhere.

USB Powered



Indicator Light



19*19 LED Array



Portable Design



Electromagnetic Sensor

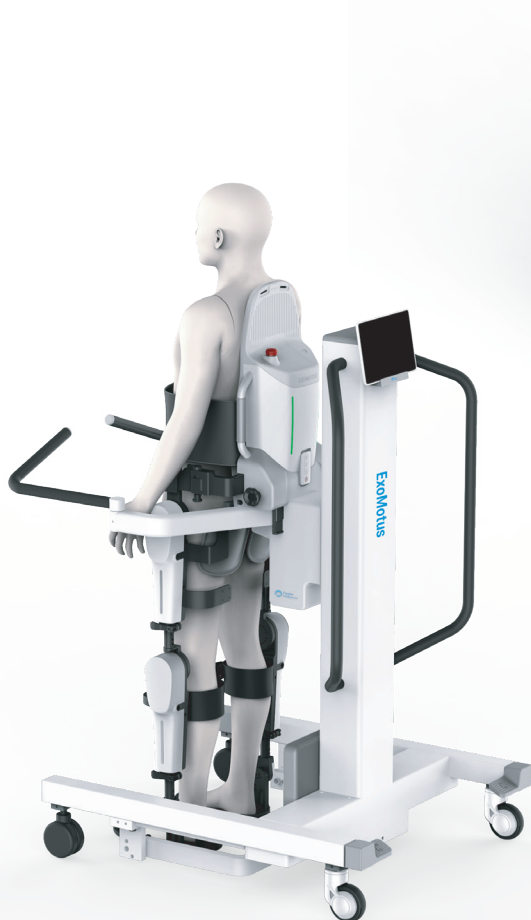




ExoMotus™ M4

Lower Limb Gait Rehabilitation Equipment

ExoMotus™ M4 integrates a lower limb exoskeleton with a weight support system to deliver practical and dependable walking assistance training with gait guidance. It features dynamic weight support and offers various training scenarios to meet diverse training needs. ExoMotus™ M4 effectively accelerates the recovery process and enhances quality of life. Additionally, its fall prevention feature ensures user safety and reduces the therapist's workload, thereby improving rehabilitation efficiency.



1. Sit-stand

Lower limb exoskeleton to provide assistance for sit-stand transfer

2. Walking

Provide assistance and safety in gait training

Multiple Training Modes



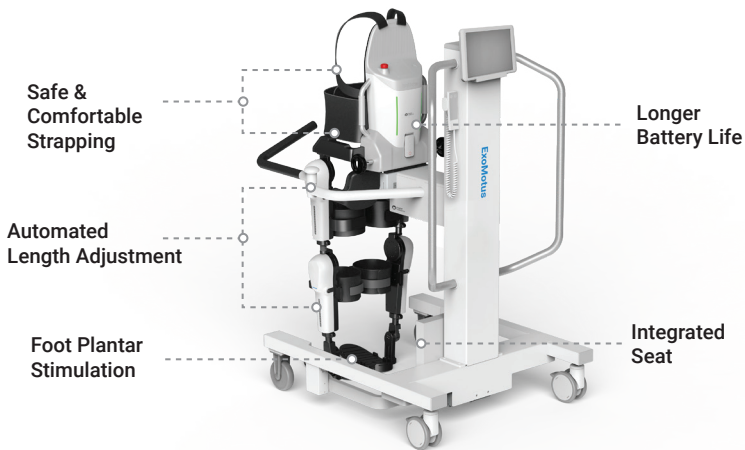
Walking



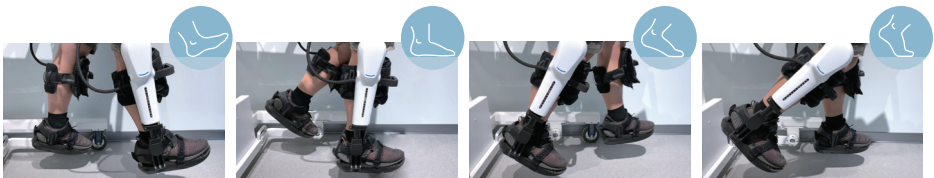
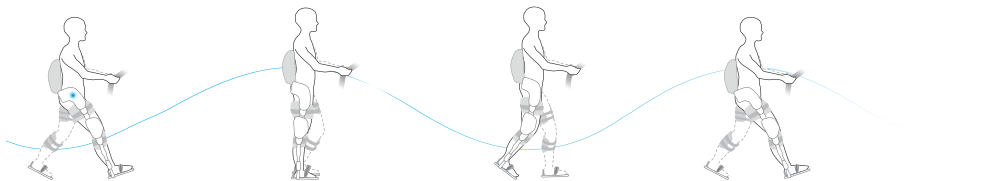
Stepping

Users can engage in verticalization early in rehabilitation to enhance sensory input, improve cardiopulmonary function, and prevent muscle atrophy.

By optimizing the gait cycle, users can achieve rhythmic walking, alleviate muscle tone, and reduce abnormal gait patterns.



Vertical DOF Ensuring Natural Gait Pattern



ExoMotus™ M4 Immersive

Revolutionizing Gait Rehab: Where Robotics Meet Virtual Reality

The ExoMotus™ M4 is a programmable lower-limb exoskeleton that delivers machine-assisted gait training. When paired with VR, it creates immersive environments that enhance balance, coordination, and motor recovery. This combination boosts engagement, improves motor learning, and makes rehabilitation more effective.

Gait Training in 2D & 3D Landscapes

Gait training is enhanced with immersive 2D and 3D environments, offering real-world 360° walking scenarios with robotic assistance. Patients benefit from engaging, visually guided training that boosts motivation and supports faster gait recovery. For motion-sensitive users, 2D modes allow training with or without a headset.



Customized Visual Environments

The one-click upload feature enables users to add personalized video content, tailoring therapy to specific cultural and environmental contexts.





AnkleMotus™

Ankle Joint Rehabilitation Equipment

AnkleMotus™ focuses on rehabilitating the ankle joint based on its specific motion patterns. It emphasizes lower limb muscle strengthening and promotes neuroplasticity in the muscle groups essential for walking, thereby aiding in the recovery of mobility.



Stretching

Ankle joint stretching to improve soft tissue tension



ROM Training

Improve the ROM of the ankle joint with different training modes



Motor Control Training

Improve motor control ability through targeted training



Strength Training

Simulating different resistance in the ADL to improve muscle strength

DualMotus™

Multi-Functional Rehabilitation Equipment

DualMotus™ is a cutting-edge multi-limb robotic rehabilitation system designed to restore mobility, strength, and independence for patients recovering from stroke, neurological injuries, or orthopedic conditions.

Through immersive simulation, intelligent motion tracking, and engaging gamified therapy, DualMotus™ delivers a motivating and effective rehabilitation experience that empowers patients to train with purpose and progress with confidence.



Real-Time Recovery

Real-time therapy for stroke and injury recovery.



Interactive Neuro Rehab

Practice activities of daily living (ADLs) through interactive games and measurable outcomes.



Compact & Mobile

Space-saving design, easily movable for flexible clinic setups.



Comprehensive Rehab Framework

The software ecosystem combines personalized assessments, real-time tracking, and interactive 3D games & ADL simulations to enhance rehabilitation by improving mobility, strength, and cognitive function.



Precision Rehab

DualMotus™ offers smart, full-spectrum rehab with adaptive therapy and digital assessments.



Personalized Evaluation

Accurate digital assessments tailor the program to each patient's condition.



8 Training Modes

4 Assistive & 4 Resistive modes designed to match different recovery stages.



Real-Time Progress Tracking

Visual reports help patients and therapists monitor recovery effectively.

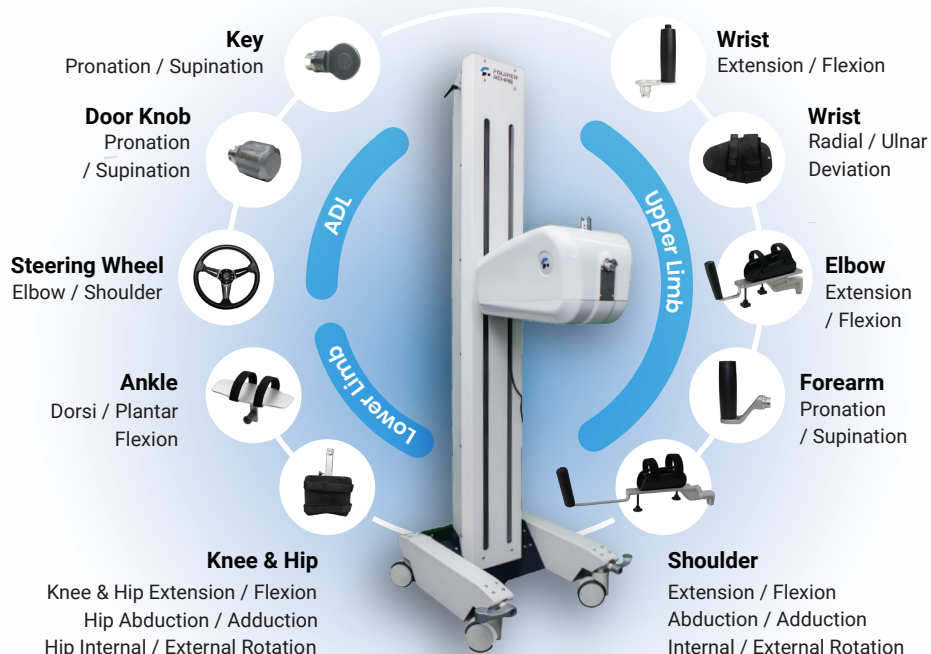


50+ Interactive Games

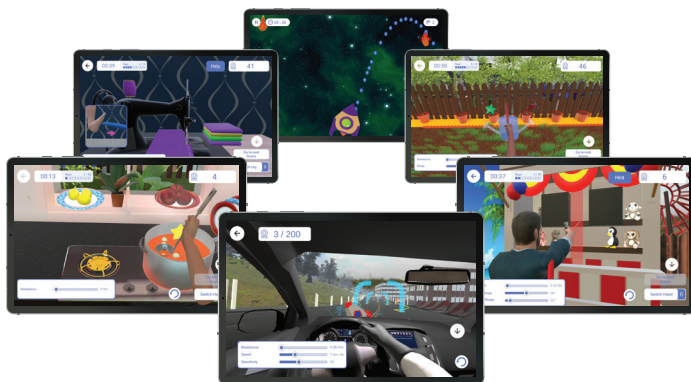
ADL and cognitive games enhance motivation and support full-limb recovery.



Attachments



Gamification Training



CycleMotus™

Active and Passive Rehabilitation Trainer

The CycleMotus™ product series provides an ideal solution for both active and passive training of upper and lower limbs. Equipped with a high-resolution touchscreen display and a controlled motor system, it meets the training needs of various rehabilitation stages. The CycleMotus™ product series enhances cardiopulmonary circulation, muscle strength, limb coordination, and other physical functions, thereby improving patients' daily living abilities.

CycleMotus™ A4 is designed for adult patients with conditions such as stroke, incomplete spinal cord injury, multiple sclerosis, and Parkinson's disease, enabling rehabilitation training in a seated position. CycleMotus™ A4K is tailored for pediatric patients undergoing rehabilitation training while seated. CycleMotus™ B2L, designed for early rehabilitation, features mobility functions and is suitable for bedside rehabilitation of patients with conditions like stroke, post-myocardial infarction, and chronic kidney failure.

Horizontal
Training



Cross Cycling



Sync Cycling



CycleMotus™ A4

Active and Passive Training System
for Upper and Lower Limbs

Abundant Training Modes Provide Training for Different Positions

Based on the user's conditions, training can be conducted in either a sitting or supine position. Additionally, the various training modes available can meet training needs across the entire rehabilitation continuum.



Lower limb training
Sitting position



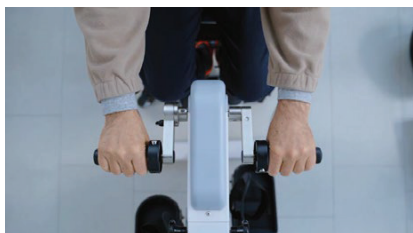
Upper limb training
Sitting position



Lower limb training
Supine position on a treatment couch



Lower limb training
Supine position on a hospital bed



Sync Cycling



Horizontal Training



Cross Cycling



CycleMotus™ A2L



CycleMotus™ A2U



CycleMotus™ B2L



CycleMotus™ A4K

CycleMotus™ A4 Immersive

A Smarter, More Engaging Rehabilitation Experience

The CycleMotus™ A4 supports patients with neurological and mobility conditions by enabling safe, effective seated training. Its touchscreen and intelligent motor system provide active and passive limb exercises that adapt to each rehabilitation stage.

Paired with ImmersiveMotus™ Series, CycleMotus™ A4 turns therapy into an engaging experience, guiding patients through virtual environments that boost motivation, attention, and motor learning with real-time feedback.



ImmersiveMotus™ Series

Virtual Reality (VR) Kit

ImmersiveMotus™ Series is an easy-to-use, intelligent rehabilitation ecosystem that combines VR, AR, and AI to support functional recovery across neurological, orthopedic, geriatric, and pediatric care.

Designed for use in hospitals, clinics, or at home, it offers immersive or camera-based therapy, transforms standard rehabilitation equipment into interactive training tools, and enables consistent, effective care without the need for Wi-Fi for most exercises.

Scalable Solutions



1.

Start Smart

Sensorless, AI-powered ImmersiveMotus™ MOVE for functional rehabilitation.

2.

Extend & Enhance

Upgrade existing equipment with ImmersiveMotus™ GO using a motion sensor.

3.

Immerse & Innovate

Enter a new dimension of therapy with ImmersiveMotus™ XR, powered by VR and AR.

ImmersiveMotus™ MOVE

Intelligent Sensor-less Therapy

ImmersiveMotus™ MOVE uses advanced AI algorithms to track patient movements in real time through the tablet's camera. This non-invasive technology captures full-body motion with precision-posture, joint range, and coordination.



Patient Independence

AR-guided exercises enable independent training.

Integrated Tele-Rehab

Built-in tele-rehab supports remote therapy in live or self-guided modes.

Engaging AR Exercises

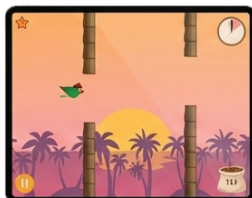
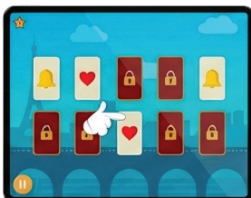
AR-guided exercises adapt to all patients, supporting mobility, balance, and strength training.

Holistic Therapeutic Approach

Combines physical and cognitive training.

AI-Powered Motion Analysis

Non-invasive, sensor-free motion tracking that accurately captures full-body movement, including posture, joint range, and coordination.



ImmersiveMotus™ GO

Smart Motion-based Interactive Rehab

ImmersiveMotus™ GO is a tablet-based rehabilitation solution that uses a button-style motion sensor to detect movement from existing therapy equipment, transforming real-world exercise into engaging, interactive therapy. By combining physical training with immersive visual and cognitive activities, it enhances motivation and supports better rehabilitation outcomes.

Seamless Device Integration

It works seamlessly with a wide range of rehabilitation equipment, including pedal exercisers, treadmills, end effectors, and static exoskeletons.



Visual-Guided Therapy

Patient movement drives immersive visuals for more engaging therapy.



Cognitive-Motor Integration

Combines movement with gesture-based cognitive challenges to boost engagement and brain stimulation.



ImmersiveMotus™ XR

Immersive AR & VR Therapy

Delivers a complete solution combining motion-based technology and an advanced headset to deliver immersive AR and VR therapy. It supports safe, guided movement in real-world settings or fully immersive virtual environments to enhance focus, engagement, and therapeutic outcomes across motor recovery, balance training, functional reintegration, and relaxation.

Augmented Reality



AR adds interactive elements to the real world for safe, guided movement with patient awareness.

Virtual Reality



VR creates immersive environments to improve focus, promote relaxation and pain relief

Diverse Rehabilitation Goals



Upper-limb Rehabilitation

Supports upper-limb recovery from gross to fine motor control, with or without controllers.

Balance & Vestibular Training

Improves balance and vestibular function through immersive stability and orientation training.

Real-World Reintegration

Prepares patients for daily life through simulated real-world scenarios.

Pain Management & Relaxation

Uses calming environments to support relaxation and pain relief.

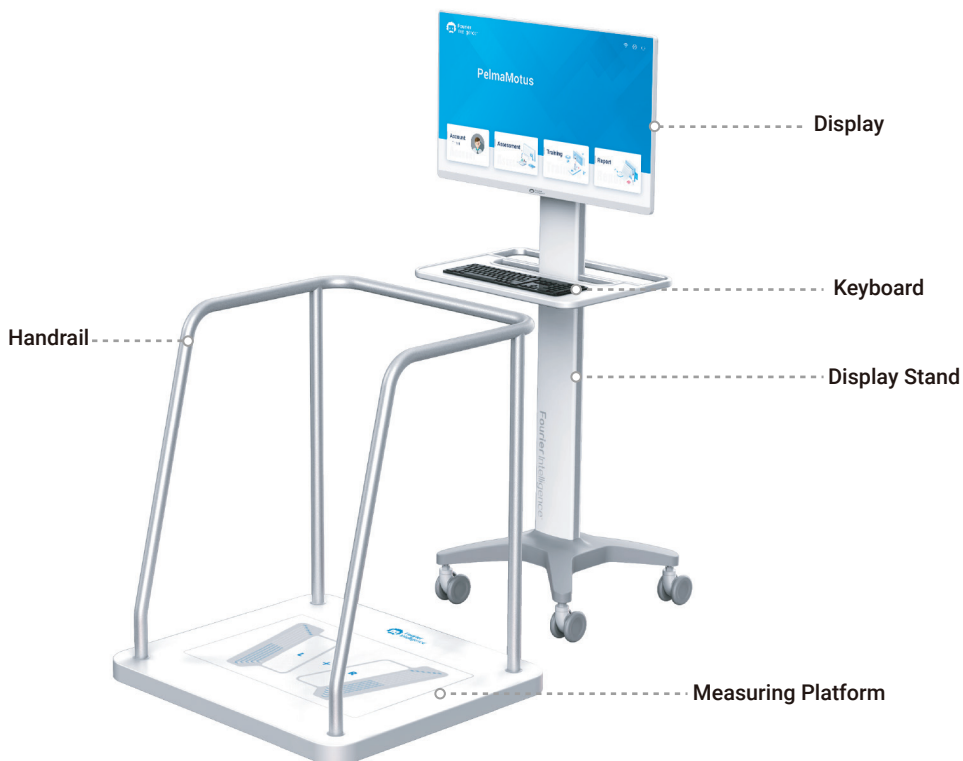


PelmaMotus™

Foot Plantar Pressure Assessment & Training System

PelmaMotus™ integrates assessment and training by adopting a large area of pressure sensor array, high-speed acquisition circuit, and intelligent analysis software.

Combined with biomechanics and assessment database, PelmaMotus™ can accurately and quickly assess the functional status of the foot, posture, and balance. It also provides targeted, immersive, and interactive gamified training.

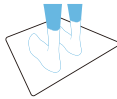


Comprehensive Data Acquisition

Various Scenarios and Options



Single Leg



Both Legs



Eyes Open



Eyes Closed

4 Assessment Options

Balance assessment with different supports and visual inputs



Barefoot



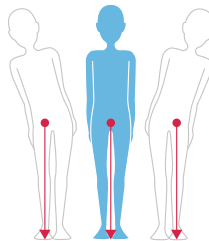
Accessories



Shoes On

3 Assessment Scenarios

Difference assessment scenarios for different stages of rehabilitation



17 COP Parameters

Balance, proprioception, vestibular system, vision, and others

Multiple Assessments

PelmaMotus™ integrates three assessment modules: balance function, foot plantar conditions and body posture. The comprehensive and professional assessments provide references for personalized balance training. They can be used as a reference for customising lower limb supporting accessories.

Balance



Proprioception



Vision



Vestibular System

Foot Plantar Pressure



Foot Arch
Recognition



Metatarsalgia



Heel Pain

Standing Posture



Uneven
Shoulders



Low Back
Pain

Limits of Stability



Neuromuscular
Coordination



Reactive
Balance



Anticipatory
Control



Advanced Technologies & Platforms

- InfinityNet™
- MetaMotus™ Galileo



03

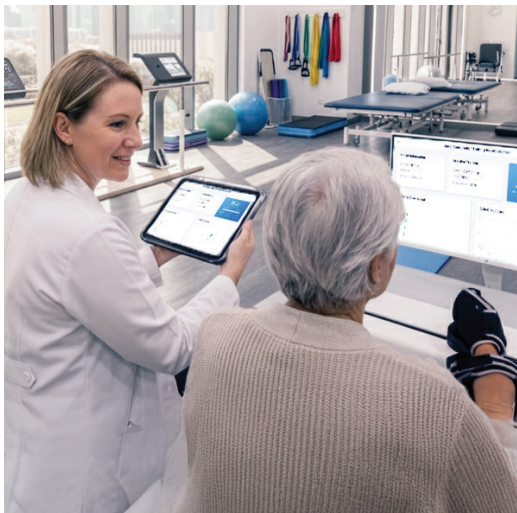
InfinityNet™

Intelligent Cloud Platform

InfinityNet™ is a secure, cloud-connected network that powers the Fourier Rehab ecosystem. It links every device, patient, and therapy session into one secure, intelligent network to deliver new standards of coordinated rehabilitation. This reduces the therapy workload and makes therapy tracking more seamless.



Infinite Care



Unified Ecosystem

Connects Fourier Rehab devices into one integrated system for synchronized therapy.

Continuous Progress

Patient data and performance metrics are automatically updated in real time.

Standardized Assessments

Delivers consistent, evidence-based evaluation protocols across all facilities.

Key Features



Care Management

Central hub for patient profiles, therapy history, and outcomes.



Unified Device Network

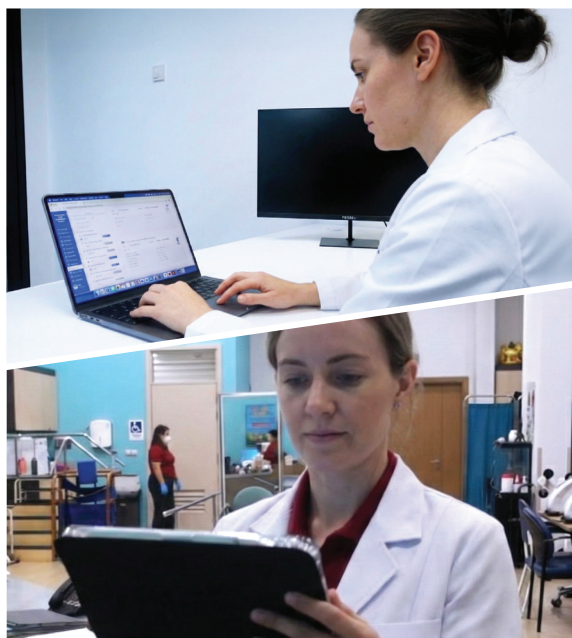
Connects Fourier Rehab devices for seamless data sharing.



Protocol Setting

Enables easy customization and standardization of therapy programs.

Elevating Rehab Efficiency



Centralized Care Oversight

Access reports and therapy summaries anytime to reduce administrative workload.

Smarter, Automated Workflows

Automated reporting allows clinical teams to focus more on patient therapy.

Secure Remote Management

Provides safe, authorized access for device monitoring and adjustments across sites.



Infinite Possibilities

Biomechanics Analysis & Rehabilitation Platform

Recipient of the Prestigious



**GOOD DESIGN
AWARD 2023**

MetaMotus™ Galileo

Biomechanics Analysis and Rehabilitation Platform

The MetaMotus™ Galileo system, developed by Fourier Rehab, is an advanced research and training platform for biomechanics, rehabilitation exercises, and sports science. It integrates cutting-edge technologies, such as a six-axis motion platform, force plate, LED curved screen, adaptive dual-belt treadmill, dynamic weight support, motion capture system, upper and lower limb rehabilitation robots, exercise equipment, and human-computer interaction software. This provides a versatile clinical assessment and rehabilitation training environment using virtual reality and robotics technology for clinical and research purposes.



Application

The Galileo system is suitable for assessing and training a variety of functional impairments in adults and children, including neurological and musculoskeletal injuries, amputations, limb disabilities, cardiorespiratory dysfunction, and degenerative conditions. It is also applicable for enhancing the capabilities of athletes and warfighters, as well as creating a versatile research environment for the training, testing, and evaluation of various robots.

Environments

Neurorehabilitation

The Galileo system is designed to address neurological disorders such as stroke, spinal cord injuries, and traumatic brain injuries. Functioning as a tool, it facilitates interactive training to bolster rehabilitation efforts, fostering neuroplasticity and recovery. Its approach, more engaging than conventional methods, has the potential to elevate treatment outcomes and increase user confidence and interest in exercise.

ADL Training

The Galileo system is integrated with a 6-DOF motion platform, dual belt treadmill, and pressure sensors. This integration enables patients to train in a challenging yet safe environment by simulating walking and falling-down scenarios with the safety harness.



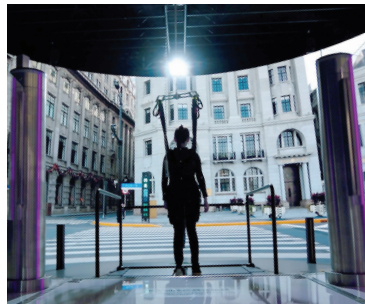
Bilateral Upper Limb Training

The integration of Galileo with two ArmMotus™ EMU supports bilateral training and mirror therapy. The diverse training scenarios simulate the motion of rowing, swimming, and ADL elements in a virtual reality environment to aid in improving users' upper limb strength, range of motion, and motor coordination.



Balance Training

The 6-DOF motion platform can simulate a stable or unstable surface to assess and train the user's static and dynamic balance ability in both standing and seated positions. This enhances motor and vestibular functionality, improving adaptability to complex environments. The system also creates multi-dimensional perturbations for vestibular rehabilitation and addressing the symptoms of dizziness.



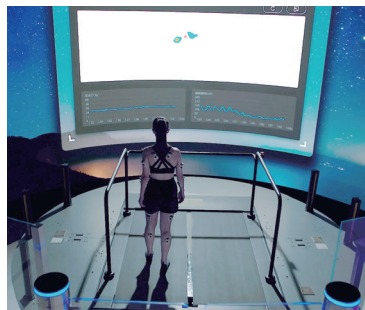
Gait Training

The weight support system, force plate, and the option of integrating ExoMotus™ M4 can support gait assessment and training. This setup facilitates early sit-to-stand and gait training in a safe environment while reducing a therapist's labor-intensive workload. The force plate and pressure sensors can conduct a comprehensive assessment and data analysis of the user's gait pattern.



Motor Skill Development & Quantified Assessment and Training

The Galileo system integrates a 6-DOF motion platform, dual-belt treadmill, motion capture system, and wireless surface electromyography (sEMG) sensors. This comprehensive integration allows users to participate in performance enhancement training within a virtual reality environment. Simultaneously, the system facilitates detailed motion analysis, providing precise and quantifiable outcome measures.



Psychological Rehabilitation

The Galileo system employs virtual reality technology to create a variety of immersive and lifelike virtual scenarios. This capability provides essential support for exposure therapy and systematic desensitization. Recognized for its safety and efficacy in addressing psychological disorders, the system establishes a controlled environment. Patients can systematically acclimate and overcome fears and anxieties within this environment, ultimately achieving therapeutic outcomes.



Pre-Event Intervention

Simulating battlefield environments for warfighters to facilitate faster adaptation. Children with special needs can better adjust to natural social environments by simulating and adapting to specific scenarios.

Post-Event Intervention

The Galileo system can be used in the post-intervention phase for psychological disorders such as PTSD, facilitating patients in overcoming fears and alleviating symptoms through immersive virtual reality environments. Additionally, it can support restoring psychological balance and promoting recovery for post-war psychological syndromes. The Galileo system stands as a secure and efficacious option for the treatment of psychological disorders.

Empowering You

Fourier Rehab is a leading technology company dedicated to developing exoskeleton and rehabilitation robotics, focusing on positive clinical outcomes since its inception in 2015. The company collaborates with researchers, therapists, and patients to deliver cutting-edge rehabilitation robotics solutions. Fourier Rehab aims to elevate patient recovery through its robotics technology, providing easy-to-use systems that enhance the lives of both patients and therapists.

Fourier Global Research Joint Labs and Clinical Partnerships





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