Biofidelic Actuated Exosuit

Novel compliant, flexible robotic components combined with a simple under-actuated architecture and biomimetic control to enable a soft, comfortable and lightweight wearable designed for performance enhancement and injury mitigation.
Compliant Biofidelic Robotic Exosuit

SRI is developing wearable “exosuit” that can augment the musculoskeletal system for performance and strength enhancement and assistance to overcome or prevent damage from injury or disease. SRI’s exosuit differs from current exoskeletons by using new muscle-like actuation, comfortable and soft skin attachment, and electronically releasable spring elements to store energy, minimize mass, bulk, and noise, as well as eliminate constraints on natural joint motions. Inspired by SRI work performed for DARPA’s Warrior Web Program, the technology is being applied to prevent and reduce musculoskeletal injuries caused by dynamic events. Currently SRI is focusing on using the technologies to assist individuals with musculoskeletal diseases.

FlexControl™
Adaptive state-based controller delivers “super reflexes”, adjusts to varying terrain, and uses an intuitive digital user interface.

FlexDrive™
Lightweight, conformal, high-torque and efficient exomuscles assist the body’s own muscles in a very natural way.

FlexGrip™
Flexible, comfortable load transfer between the suit and the body.

e-Flex™
Lightweight, flexible electrostatically clutched springs act as variable stiffness “exotendons” to adaptively store energy and limit range of motion to prevent injury or fatigue.

FlexControl™
Adaptive state-based controller delivers “super reflexes”, adjusts to varying terrain, and uses an intuitive digital user interface.

Therapeutic
- Rehabilitation
- Strength Maintenance
- Dynamic Alignment
- Dynamic Bracing
- Range of Motion
- Force + Direction

Elderly
- Mobility Assistance
- Injury Mitigation
- Posture Support
- Diagnostics
- Load Offset

Industrial
- Injury Mitigation
- Load Offset
- Position Maintenance
- Posture Support
- Dynamic Bracing

Sport
- Adaptive Protective Gear
- Muscle Memory
- Power Augmentation
- Resistance Training
- Injury Rehabilitation

Industrial
- Injury Mitigation
- Load Offset
- Position Maintenance
- Posture Support
- Dynamic Bracing

Sport
- Adaptive Protective Gear
- Muscle Memory
- Power Augmentation
- Resistance Training
- Injury Rehabilitation