CONTROLLABLE AGING SIMULATION SUIT

KEYWORDS: Programmable wearable system, Healthcare training technology, Immersive experiential learning

STATE OF THE ART

Current aging simulation solutions (e.g., empathy suits used in healthcare training) typically rely on passive components such as weights, restrictive braces, goggles, and gloves to mimic mobility, sensory, and dexterity limitations. While effective for awareness and basic training, these systems:

- Offer static and non-adjustable impairment levels
- Lack fine-grained control over specific body regions
- Do not provide real-time parameterization or dynamic scenarios

Emerging trends in wearable simulation and haptics are moving toward active systems with actuators and sensor feedback, but commercially available aging suits with individually inflatable compartments and cell-by-cell electronic control remain extremely limited or non-existent.

VALUE PROPOSITION

A programmable aging simulation suit that dynamically replicates age-related physical and sensory decline through electronically controlled actuation, enabling highly realistic, customizable, and data-driven training experiences

STAGE OF DEVELOPMENT
TRL 2

IPR LEGAL STATUS
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OWNERSHIP
The rights are held by the University of Coimbra.

COLLABORATION SOUGHT
Collaboration for further developments.

ADVANTAGES

- High realism and precision
- Personalization
- Dynamic scenarios
- Data-driven training

APPLICATIONS

- Healthcare and clinical training
- Higher education (medicine, gerontology, psychology)
- Care providers and hospitals
- Age-friendly design and ergonomics testing
- Research and innovation projects.

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