PERSONALIZED EXOSKELETONS
IMPROVING LIFE AND REHABILITATION
FOR LOWER LIMB PARALYSIS PATIENTS

Summary

This technology is a highly advanced exoskeletal suit that is designed to assist people with lower limb paralysis. The design utilizes 3D printing and the latest advancements in material science and neuromachine interface technology to enable affordable, customized exoskeleton robot suits for all people suffering from paralysis and including small, growing children. This is the only exoskeletal suit available that can be customized as a child grows. A better fitted robot suit makes a better walking aid and enables more efficient therapy. The inventors have developed a prototype and shown that the ability to customize this suit makes it the most effective, lightest, and most powerful robot walking aid available.

Competitive Advantages

- Customized equipment gives patients more effective therapy
- Customized equipment “fits better” and therefore can cause the user to feel better/more confident while coping with this condition
- Reducing the disability factor of paralysis patients reduces extra burden placed on society

Problem Addressed

- The exoskeleton robot suits available today are limited and typically can only be fitted to an average sized adult
- They also cannot not provide sufficient treatment during therapy and rehabilitation and especially not for small, growing children

Applications

- Therapy aid for paralysis patients
- Medical tool for therapy, rehabilitation assistance, and diagnostics
- Research instrument, market extension to upper limb rehabilitation, or market extension as an assistive exoskeleton for on-the-job applications that require strength and endurance

Patents

- PCT/US2017/037457
- US 62/349,921

Publications

- Contreras-Vidal, Jose L et al. IEEE’s 5th International Winter Conference on Brain-Computer Interface (BCI) Location: SOUTH KOREA Date: JAN 09-11, 2017

Contact

Tanu Chatterji, PhD.
Technology Transfer Associate
oitm@Central.uh.edu | 713-743-0201
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