NGI EXPLORERS

CHALLENGE #20
UH-PED-03

Paediatric Neuroexoskeletons for Restoring Gait

Meet the expectations of this US Node through the technology challenge described below

GOALS

Understanding the development of sensorimotor networks in healthy able-bodied young children and children with disabilities is critical for developing brain-robot interfaces for diagnostic, rehabilitation, and assistance. This project will use non-invasive scalp electroencephalography in young children to train neural decoders that infer motor intent from brain activity. The decoders, likely based on interpretable AI/deep networks, will be used to control powered robotic exoskeletons for walking in children with lower-limb disabilities.

DETAILS

The goal is to find new types of reliable neural decoders that 'growth/adapt' with the child and provide proof-of principle demonstration in paediatric clinical populations. There may be a potential IP and a peer-reviewed publication.

SKILLS REQUIRED

Machine learning/deep learning, EEG knowledge, interest in working with young populations.

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