AUTONOMOUS BALANCE CONTROL OF LOWER LIMB EXOSKELETON FOR SPINAL CORD INJURY SUBJECTS

A MOMENTUM-BASED CONTROL FRAMEWORK

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Lower limb exoskeletons (LLE) can enhance the autonomy of paraplegic users by restoring their ability to stand and walk. However, most commercially available LLE require the users to maintain balance with the use of crutches, which is exhausting and keeps their hands occupied (limiting their capability to interact with the environment).

The aim of this project is to implement and test a controller for our LLE (see left) that allows the device to keep balance autonomously while coping with external and internal disturbances, like user-LLE interaction wrenches and upper body motions of the user.

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