Adaptation of Augmentable Load-Carrying Technology to Knee Brace Platform
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Can existing augmented load-carrying technology be implemented to enhance modern knee braces?

Approximately 200,000 anterior cruciate ligament (ACL) injuries occur annually in the US with a 10% reinjury rate [2,3].

Knee braces are used in conjunction with intensive physical therapy to aid in recovery.

BME colleagues are developing knee joint sensing device to measure joint angle and linear acceleration.

The goal of this work is to adapt existing exoskeleton / prosthetic movement damping mechanisms [4] to a knee brace platform.

The level of damping will be adjusted by knee joint sensing unit.

BACKGROUND & MOTIVATION

QUESTION

PRODUCT ARCHITECTURE

MANUFACTURING COSTS

FUTURE WORK

ACKNOWLEDGMENTS

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Table 1: Market price estimation for two main concepts. Market price was calculated based on the formula ‘Selling Price = Cost / (1 - Margin)’ where ‘Cost’ is total manufacturing cost and ‘Margin’ is DonJoy gross profit margin of 59% [5, 6].

References