

Autonomous navigation for a motorized lift

Record number : OPR-774

Overview

RESEARCH DIRECTION

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ADMINISTRATIVE UNIT(S)

Faculté de génie
Département de génie électrique et de génie informatique
Département de génie mécanique
Institut interdisciplinaire d'innovation technologique (3IT)

LEVEL(S)

2e cycle
3e cycle
Stage postdoctoral

LOCATION(S)

3IT - Institut interdisciplinaire d'innovation technologique

Project Description

Arjo and Université de Sherbrooke are partnering to develop collaborative-robotic technologies for the next generation of transfer devices used in hospitals and long-term care units. The goal of this Alliance project is to develop lifting robot assistants and an eco-system of devices for a smart hospital room concept that would release caregivers of time-consuming, low-value tasks and empower patient with mobility assistance features. The proposed assistance technology aims to address these two societal problems: 1) improving the caregivers' health and work-conditions with assistance scheme limiting the physical efforts during patient transfers and 2) improving the patients' care quality by facilitating occasions for them to move out of their bed.

The mandate that will be entrusted to a graduate student, supported by an engineering team at 3IT, is to carry out a technological exploration of a concept of motorized patient lift that would have the ability to move autonomously in a hospital environment. The goal would be for these devices to have the ability to go to a storage space automatically and come to a specific room when a request is made. The student's mission will be to identify the technological challenges specific to the hospital environment, and to adapt certain technologies to this context (autonomous navigation, trajectory planning, obstacle avoidance, etc.). The final objective is the development of an experimental proof of concept.

Keywords: Mechanical design, robotics, biomechanics, mechatronics

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Starting date : January 2023

**Discipline(s) by
sector**

Funding offered

Yes

Sciences naturelles et génie

Génie électrique et génie électronique,
Génie mécanique

The last update was on 12 March 2024. The University reserves the right to modify its projects without notice.