Development of a virtual reality simulator application for a cable driven robotic arm

Abstract

Objective and Scope of Project

Hyper-redundant robots have a large or infinite number of degrees of freedom. Such robots are analogous to snakes or tentacles and are useful for operation in highly constrained environments. In conventional robots, each link moves in a 2D plane that is normal to its actuation axis that is controlled by a motor-gearbox assembly. Thus the number of DOFs for a conventional robot is defined by the number of joints. Hyper-redundant robots, on the other hand, have joints that are defined by a spherical workspace – similar to a ball bearing, and the actuation is controlled using cables or cables. As a result, each joint is not restricted to a 2D plane and can actuate the in a 3D workspace. The objective of this project is to develop a simulator tool to validate the design of the cable driven robotic arm.

The project work will include development of the simulation application, programming necessary interfaces with theoretical calculations, deployment and testing.

Number of students - 02 (Max)

Eligibility: Only students of _Electronics/Computer Science/ Computer engineering_ branches can submit their application at following email addresses

Preference: Student should have good programming skills

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