

## Series of Aras Public Webinars

# ARAS Research on Parallel and Cable robotics: Developed Products and Algorithms

### Speakers



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### Date & Time

Date: Monday, August 31st , 2020 (10 Shahrivar 1399)

Time: 18:00-19:30 (+4:30 GMT Tehran local time)

9:30-11:00 (-4:00 GMT Canada Eastern time zone)

### Abstract

Cable and parallel robotics have been gaining more attention among researchers due to their unique characteristics and applications. Simple structure, high payload capacity, agile movements, and simple structures are the main characteristics that nominate cable-robots from the other types of manipulators for many applications such as imaging, cranes, agriculture, etc. The ARAS Parallel and Cable Robotics (PACR) group is focused on the development of such novel manipulators and their possible applications. Interdisciplinary research fields such as dynamics and kinematic analysis using classic and modern approaches, development of easily deployable robots through robust controllers, implementation of novel self-calibration algorithms, and establishing modern and multi-sensor perception systems for them are among the active lines of research in this group. The theoretical results of this active research group are also directly incorporated for producing commercial products through the spin-off and startup companies originated from the team. Kamalolmol<sup>®</sup> robot is a representative of such products, which is a fast deployable edutainment cable-driven robot for calligraphy and painting (chiaroscuro) applications. Additionally, PACR exploits the simplicity of cable robots combined with SLAM and perception algorithms to create commercial inspection and imaging robots for various applications. In this webinar, the underlying concepts of such robots and the current state-of-the-art development of the group will be presented.

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