

Series of ARAS Public Webinars

Artificial Intelligence and Deep Learning Methods in Autonomous Robotics

Speakers



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Abstract

Artificial intelligence has found its permanent place among cutting-edge researches in various applications. In particular, the deep learning approaches are very promising with optimized solutions for a variety of applications. Considering the enhanced computational capability to execute these algorithms on embedded systems such as Nvidia's Jetson boards with an outstanding performance, **deep learning** approaches are progressively employed in **autonomous robotics**. As a major part of each autonomous robot, a **camera** plays a significant role to extract rich information on the surrounding environment. **Object detection and tracking** is a necessary task for the autonomous robot to maneuver suitably in unstructured environment. Furthermore, these methods are very promising in other applications like monitoring and evaluating a process. Regarding the tracking task, estimation of the depth is of high importance to realize a 3D object in the environment. It is usually critical to have a **depth map** of the robot's frontal view, which may be considered as a more comprehensive requirement for autonomous vehicles. In this presentation, A review of **ARAS** Autonomous robotics group on the development, implementation, and optimization of deep learning approaches especially in image processing are addressed. We aim to focus on applications used for **autonomous robots** and vehicles and introduce some of our recent **industrial projects**.

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