2022 | Volume Volume - 5 - Issue Issue - 1

In this issue

Research Article

Open Access Research Article PTZAID:ARA-5-113

A model predictive approach to control vehicle skidding by sideslip angle estimation

Published On: August 19, 2021 | Pages: 041 - 046

Author(s): Simone Graffione*, Roberto Sacile, Enrico Zero and Chiara Bersani

Nowadays, many cars are equipped with Advanced Driving Assistance Systems (ADAS), from cruise control to collision detection and speed limit signalling. In recent years, the scientific community has carried out a lot of research in the field of autonomous driving system with the aim of improving fuel consumption, traffic and safety, but it is still a developing field ...

Abstract View Full Article View DOI: 10.17352/ara.000013

Open Access Research Article PTZAID:ARA-5-110

The application of unsupervised machine learning to optimize water treatment membrane selection

Published On: July 03, 2021 | Pages: 030 - 033

Author(s): Khaled Younes*, Omar Mouhtady and Hamdi Chaouk

Artificial intelligence technologies have been extensively used to decipher water quality and characterization. Fewer studies have employed these techniques in the purpose of optimizing a water treatment process. Here, we apply unsupervised machine learning techniques for the optimization of the choice of membranes, following the different constraints and conditions e ...

Abstract View Full Article View DOI: 10.17352/ara.000010

Open Access Research Article PTZAID:ARA-5-109

Modelling, Design and Validation of a Parallel Kinematic Robot for Additive Manufacture Applications

Published On: June 11, 2021 | Pages: 019 - 029

Author(s): Marcel Lahoud*, Leonardo Melendez and Arturo Gil

The additive manufacture is a fabrication process that has taken huge steps in the last decade, even though the first researches and prototypes are around since almost forty years ago. In this article, a design method for a Parallel Kinematics Robot for Additive Manufacturing Applications is proposed. A numerical model is obtained from the kinematics of the robot for ...

Abstract View Full Article View DOI: 10.17352/ara.000009

Open Access Research Article PTZAID:ARA-5-108

Smart wheel chair

Published On: May 22, 2021 | Pages: 011 - 018

Author(s): Sarmad Hameed*, Muhammad Hamza Shoukat, Abdur Rafay Khan and Khwaja Mobeen Haroon

While degrading mobility, one of the major concerns affecting the independent ability of elderly / disabled people to live. Mobility assistive technologies are now being built to uplift people’s living conditions. However, improvements are required to existing mobility assistive devices. This paper explores designing and building a smart wheel chair with several contr ...

Abstract View Full Article View DOI: 10.17352/ara.000008

Open Access Research Article PTZAID:ARA-5-107

Early experience with force-space navigated robotics for glenoid implantation during total shoulder arthroplasty

Published On: April 14, 2021 | Pages: 001 - 010

Author(s): Corey D Smith, George S Athwal and Louis M Ferreira*

Purpose: Glenoid replacement is an integral component of Total Shoulder Arthroplasty (TSA); however, glenoid component loosening, and premature wear can result from poor glenoid bone preparation and initial implant placement. Surgical robots have been used in some arthroplasty procedures to improve accuracy, but not in TSA. Moreover, arthroplasty robotics has very low ...

Abstract View Full Article View DOI: 10.17352/ara.000007

Mini Review

Open Access Mini Review PTZAID:ARA-5-111

Artificial intelligence: Explainability, ethical issues and bias

Published On: August 03, 2021 | Pages: 034 - 037

Author(s): Alaa Marshan*

There is no doubt that Artificial Intelligence (AI) is a topic that is attracting increasing attention from different communities, business and academic. AI adoption and implementation is faced by the difficulty of interpreting and trusting the outcomes of AI algorithms. Several ethical issues related to AI adoption such as algorithms and data bias are among the facto ...

Abstract View Full Article View DOI: 10.17352/ara.000011

Case Study

Open Access Case Study PTZAID:ARA-5-114

Stakeholder involvement in the innovation process: An example in medical robotics, the ROBO-K project

Published On: December 14, 2021 | Pages: 047 - 050

Author(s): Nathalie Pichot, Kévin Nadarajah, Isabelle Bonan, Guy Caverot, Pauline Coignard, Jean-Luc Le Guiet and Alain Somat*

In the field of medical robotics, many studies have called for the integration of end-users in the innovation process. The objective is to identify the factors that facilitate (or not) the use of the designed robots and thus try to guarantee their diffusion in the care services. This recommendation was followed in the ROBO-K project. The ROBO-K project proposes the de ...

Abstract View | Full Article View | DOI: 10.17352/ara.000014

Clinical Techniques

Open Access Clinical Techniques PTZAID:ARA-5-112

Use of orthospin technology in the correction of complex limb deformities

Published On: August 18, 2021 | Pages: 037 - 040

Author(s): Adam D Geffner*, Taylor J Reif, Austin T Fragomen and S Robert Rozbruch

Circular external fixators using hexapod struts are a valuable tool in the treatment of complex, multiplanar limb deformities. The benefits of external fixation technology are well documented and include excellent biomechanical fixation allowing weight bearing and range of motion of joints during treatment, as well as superb versatility to manage a host of challenging ...

Abstract View | Full Article View | DOI: 10.17352/ara.000012