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DESIGN AND SIMULATION OF A HUMANOID SERVICE ROBOT FOR THE CONTROL LABORATORIES - AUTOMATION AND TELECOMMUNICATIONS OF THE NATIONAL TECHNOLOGICAL UNIVERSITY OF SOUTH LIMA

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INTRODUCTION

Robotics has been evolving with the creation of increasingly complex machines, which can replace us in the realization of the routine activities of the house, in an increasingly complex and efficient way. Figure 1 shows the evolution of robotics in the last three decades, from the migration of robotics from the industrial field to other areas of application outside the manufacturing environment, such as service and personal robots. Within the wide range of possible robots that can be developed, service robots of humanoid type are those that offer greater technological challenges but also greater benefits once achieved.

METHODS

The research is developed based on the scientific theories of engineering, so the results will be determined and evaluated based on the simulation. The design and simulation process will require the following steps: Determine and apply a humanoid robot service design methodology, Design and simulate the mechanical structure of the humanoid robot, Design and simulate the locomotor system of the humanoid robot, Design a feeding system and recharge the batteries of the humanoid robot, design and simulate the electronic and control system of the humanoid robot, design and simulate the computer system and control interface of the humanoid robot.

RESULTS

The investigation is in an initial stage through the application of a service robot design methodology. It is expected as much interest to simulate each design stage to determine the need for adjustments.

DISCUSSION

American and European universities include humanoid robots as part of their educational processes, teaching - learning, as well as those that can interact with students, as they are in libraries, soup kitchens, as well as with teachers, through support in dictation of the chair, as well as in laboratory environments.

CONCLUSION

Humanoid robots are applied in foreign universities for educational purposes and interaction maximizing the performance of various processes performing a specific task in an automated and / or autonomous manner. Due to the development of humanoid service robots for support in daily and academic tasks, the need arises to develop a humanoid robot Laboratory Assistant for the National Technological University of South Lima, with the ability to perform the function of support in the administration of materials, instruments, as well as a research platform for future projects.