

# **DESIGN AND FABRICATION OF SERVO CONTROLLED PICK AND PLACE ROBOT**

A project report submitted in partial fulfillment of the requirements for the award of  
the Degree of

**BACHELOR OF TECHNOLOGY  
IN  
MECHANICAL ENGINEERING**

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**AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY**

**NAAC & N.B.A. Accredited institution, Approved by AICTE,**

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# AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

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## DEPARTMENT OF MECHANICAL ENGINEERING CERTIFICATE

This is certify that the project work entitled “**DESIGN AND FABRICATION OF SERVO CONTROLLED PICK AND PLACE ROBOT**” is a bonafied record of work done by **CH.RAJESH (19815A0309)**, **A.SATISH (19815A0303)**, **K.SIVA KRISHNA (19815A0331)**, **K.DHILIP MANIDHAR SAI (19815A0334)** in partial fulfilment of the requirement for the award of Bachelor of technology in **MECHANICAL ENGINEERING** by Jawaharlal Nehru technological university, Kakinada During the year 2018-2022.

**PROJECT GUIDE**

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## ABSTRACT

This project focuses on the design and fabrication of a pick and place robotic arm. The robotic arm is intended for educational purposes. In this project we are designing the robotic arm for improved accuracy by using servos to power the joints in the robotic arm. We are designing the robotic arm using CATIA software. In this project we are going to fabricate robotic arm which performs the pick and place operation. The project covers the procedure for selection of the servos used to power each joint of the arm in details. There are numerous dimensions over which robotic arms can be evaluated, such as torque, payload, speed, range, repeatability and cost, to name a few. Robot manipulators are designed to execute required movements. Their controller design is equally important. The robot arm is controlled by a serial servo controller circuit board.

This work involves designing and fabricating a simple pick and place arm type robot that could be used in handling of parts during different production process. The production process may include 3D printing, machining, sheet metal operation, and assembly of simple parts etc. The problem is made very specific with the design objective of picking objects like plastic caps, glass blanks, small sheet metal parts, etc., from one work station to another work station.