IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 7, June 2025
Impact Factor: 7.67

Low-Cost Self-Calibrating Robotic Arm Using Potentiometer Feedback and Arduino Uno

Souvik Maiti[1], Srikant Khator[1], Souvik Jana[1], Sovan Dey Sutradhar[1], Souvik Das[1]
Anurima Majumdar[1], Palasri Dhar[1], Antara Ghosal[1]
Dept. of Electronics & Communication Engineering[1]
Guru Nanak Institute of Technology, Kolkata, India

Abstract: *The abstract describes a project that focuses on creating a low-cost robotic arm using an Arduino Uno, servo motors, and potentiometers. This robotic arm can automatically calibrate itself by using feedback from the potentiometers, which measure the position of its joints, eliminating the need for expensive sensors or manual adjustments. The design is aimed at educational settings and budget friendly projects, emphasizing affordability and ease of use while ensuring the arm operates reliably and accurately [1]*

Keywords: Robotic arm, Self- calibration, Potentiometer feedback, Arduino Uno, Low- cost robotics, Servo motor control, Closed-loop system

DOI: 10.48175/IJARSCT-28065