

Visvesvaraya Technological University

Belgaum, Karnataka-590 014



A Project Report on

“WIRELESS VEHICLE WITH ANIMATRONIC ROBOTIC ARM”

**Project Report submitted in partial fulfillment of the requirement for the
award of the degree of**

**Bachelor of Engineering in
Electronics and Communication Engineering**

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Abstract

In today's world there is an increasing need to create artificial arms for different inhuman situations where human interaction is difficult or impossible. They may involve taking readings from an active volcano to diffusing a bomb. Here we propose to build a robotic arm controlled by natural human arm movements whose data is acquired through the use of flex sensors and teaching robot.

This Project aims at developing a novel, wireless embedded teaching system for a multi-jointed wireless robotic arm. Differing from the traditional teaching panel method, the proposed method does not require any complex computations for coordinate transformation and is a simpler scheme. The proposed teaching system includes a small teaching robot, which is scaled to the real jointed robot, however, joints are replaced with potentiometers and a flex sensor based Data Gloves for detecting the movements of the user's fingers. The main control board (Arduino) receives voltage signals from the teaching robot via its analog pins and transforms them into position commands for the motion of each joint and fingers. When a flex sensor is bent at certain angles, the voltage across it changes. This voltage sensed is processed by arduino to rotate the corresponding servo motors wirelessly using Xbee radio frequency module.

In order to make the system mobile, the Robotic arm is mounted over a 4 wheeled robotic vehicle. The vehicle is controlled using joystick and wireless camera. With the aid of arm & vehicle movement controller and wireless camera the whole unit can be controlled from a span of 100 meters wirelessly.