

# Designing an Affective Robot Pet Companion

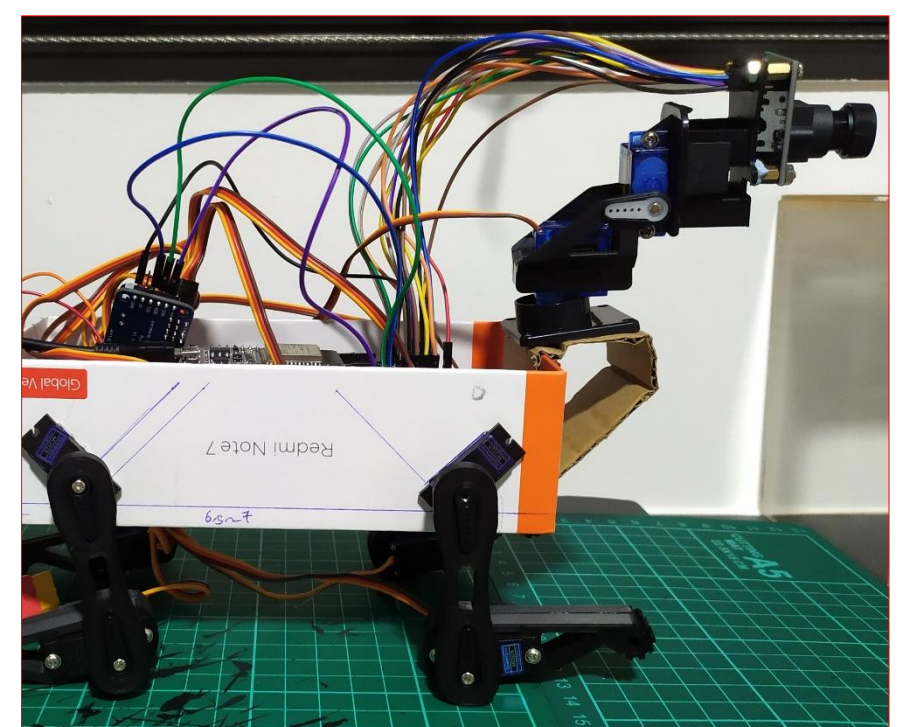
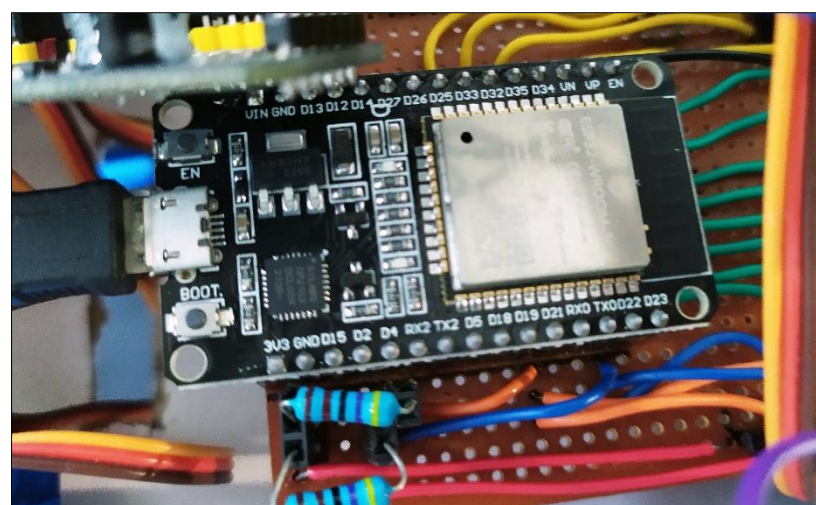
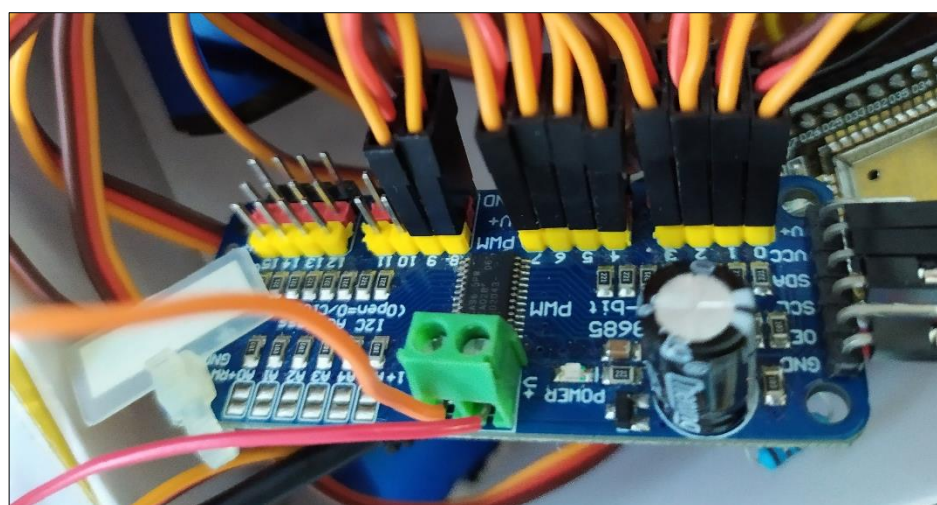
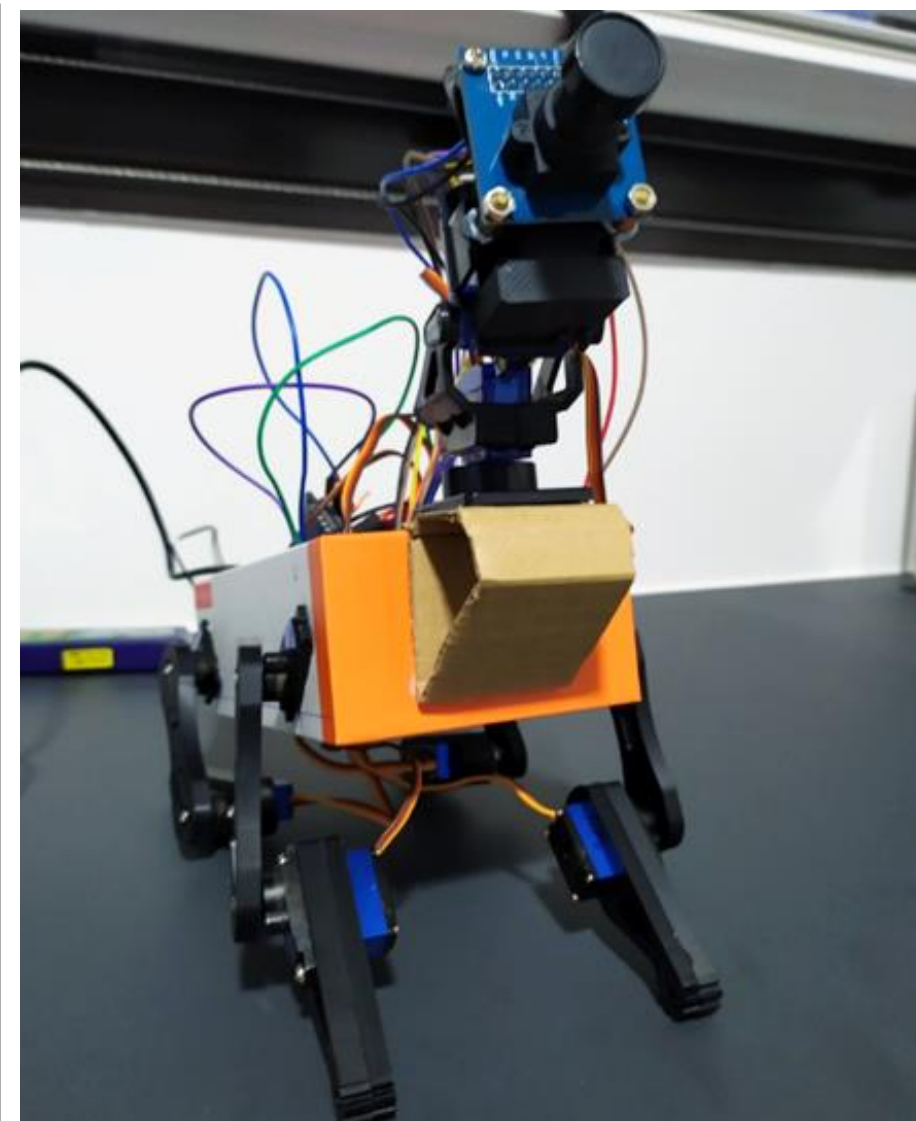
## 8-DOF quadruped robot that can detect human emotions

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### Project Objectives:

This project aims to design a low-cost pet companion robot prototype from scratch. The focus is on two areas: quadruped robot design, and affective computing. The robot prototype is a 4-legged robot with 8 degrees of freedom (DOF), and observes facial expressions to detect the emotions of the person it is interacting with. The prototype serves as a base for implementing more functions and features to create emotionally intelligent robots.



### Key Features:

- Electronics and physical prototyping
- 3D printed parts designed in SolidWorks
- 8DOF poses and face tracking
- Computing server for face detection and CNN model for emotion recognition
- Hardware abstraction layer (HAL) in robot firmware design

### Face Detection + Emotion Recognition

