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Smart Electric Cart for Vegetable Vendors

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Abstract: *Due to urbanization and industrialization, there is a rapid acceleration of migration from rural are to urban area. So urban centers are unable to provide employment to all workforces, so they have to find other opportunities for the settlement in informal sector. Within this informal sector, vendors sell their goods in competitive market. Street vendors are often those who are unable to get regular jobs in the remunerative formal sector on account of their low level of education and skills. They try to solve their livelihoods problems through their own meager financial resource. They are the main distribution channel for a large variety of products of daily consumption like fruits, vegetables, readymade garments, shoes, household gadgets, toys, stationery, newspapers, and magazines and so on. If they were to be eliminated from the urban markets, it would lead to a severe crisis for fruit and vegetable farmers, as well as small scale industries which cannot afford to retail their products through expensive distribution networks in the formal sector. Corona virus sickness has become a big public health issue in 2019. Because of its contact-transparent characteristics, it is rapidly spreading. The use of a face mask is among the most efficient methods for preventing the transmission of the Covid-19 virus. Wearing the face mask alone can cut the chance of catching the virus by over 70%. Consequently, World Health Organization (WHO) advised wearing masks in crowded places as precautionary measures. Because of the incorrect use of facial masks, illnesses have spread rapidly in some locations. To solve this challenge, we needed a reliable mask monitoring system. Numerous government entities are attempting to make wearing a face mask mandatory; this process can be facilitated by using face mask detection software based on AI and image processing techniques. For face mask detection, sanitization and social distancing the approaches mentioned in the article utilize Machine learning, Deep learning, and many other approaches. It will be simple to distinguish between persons having masks and those who are not having masks using all of these ways. The effectiveness of mask detectors must be improved immediately. In this article, we will explain the techniques for face mask detection with a literature review and drawbacks for each technique..*

Keywords: Electric Cart, Vegetable Vendors

I. INTRODUCTION

Vendors are defined from an economic, cultural and legal position, are those people who offer goods or services for sale from public places, primarily streets and pavements. Street vending is a global phenomenon and the most visible aspect of the informal sector. Street vendors are often those who are unable to get regular jobs in the remunerative formal sector on account of their low level of education and skills They are the main distribution channel for a large variety of products of daily consumption like fruits, vegetables, readymade garments, shoes, household gadgets, toys, stationery, newspapers, and magazines and so on. If they were to be eliminated from the urban markets, it would lead to a severe crisis for fruit and vegetable farmers, as well as small scale industries which cannot afford to retail their products through expensive distribution networks in the formal sector. The importance of this sector cannot be undermined, especially considering that the government does not have the capacity to provide jobs to the millions of unemployed and underemployed people in India. Overall employment in the formal sector is actually declining. This means most people in India have to fend for themselves. People in the informal sector ought to be encouraged to grow and prosper if the governments want to reduce unemployment and poverty in our country. They contribute significant role in local economic growth and development of the urban economies.

Recently India along with almost all big and small countries stated emergency conditions for the novel corona virus (COVID-19). Practically, the whole population of the world is under lockdown and people are maintaining social distances as suggested by the World Health Organization (WHO). This deadly virus has infected tens of laths individuals

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and continues to spread globally. Across India, persons are losing jobs, working from home, being hospitalized and even vanishing life as a result of COVID-19 infections. Hospitals are experiencing higher than normal patient loads and treating all patients quickly and effectively now becomes a very challenging task. Due to fear, country-wise lockdown, and suspended OPDs in Hospitals regular patients are also not able to approach doctors.

Precaution is always better than cure. But since there isn't any cure yet available, the only option we are left with is to follow the precautions. And failing to do so may have severe consequences.

Since there is no vaccine yet available in the market, the only way to be safe is by taking precautions. It is suggested to wear a face mask and maintain social distancing to avoid coming in contact with novel corona virus. Studies have proven that masks help in slowing down the spread of infection as the virus mainly gets transmitted with the aerosols which come out of an infected person's nose or mouth while coughing or sneezing. Therefore, we are going to build a Raspberry Pi-based face mask detector which detects whether the person is wearing a mask or not.

II. METHODOLOGY

By considering the problems with the above statement, we are going to build a projectmodel titled “SMART ELECTRIC CART FOR VEGETABLE VENDORS".

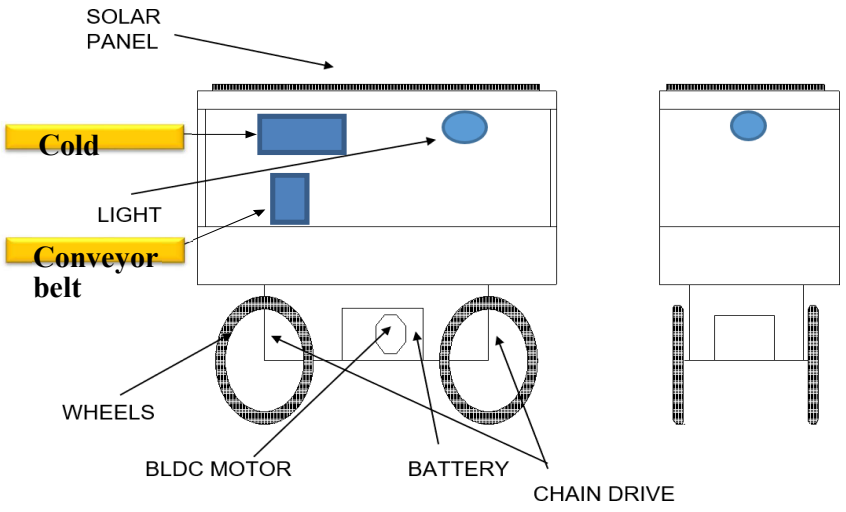
The movement of the cart will be operated through a DC drive and also it contains basicfacilities like mobile charging, lighting, mic system, cooling fan etc.

III. COMPONENTS

The components used are listed below

1. Solar panel
2. Solar charge controller
3. Battery
4. BLDC Motor with controller
5. Chain Drive
6. Bearing
7. Mild Steel Rods
8. Peltier Cooling kit
9. HTC Digital Hygrometer
10. PWM DC MOTOR controller
11. 24 V 250W Electric motor
12. Conveyor belt

IV. BLOCK DIAGRAM AND CONNECTION



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BLOCK DIAGRAM OF ELECTRIC CART

V. CONCLUSION

Street vending is providing employment and income to the rural poor people in urban sector . It provides an important source of earnings, to achieve sustainable development of the city's economy and services to support since covid -19 breakthrough for last two years the earning of the street vendors is completely stopped hence we are building a model of electric cart for street vendors with covid -19 protocols.