

Project Title: AI enabled cost effective solution for COVID-19 detection

Motivation: The cost of a testing kit is high and limited in number. Keeping in view the population of the country, there is a need to filter out severe patients for actual testing of Covid-19.

Objectives:

1. Design and development of a prototype for COVID-19 detection using artificial intelligence (AI) based embedded sensors.
2. The performance of the system must be high in terms of detection accuracy and predict the grade of severity of the disease.
3. The cost of the system must be minimal and which will be useful to common people of India.

Methodology:

1. Data Acquisition a. Temperature level, fatigue level, coughs level, nausea level from various sensors. b. CT scan images of lungs. c. Other data/information from nearby hospitals.
2. Realization of AI based embedded sensors a. Placed all the sensors like inertial sensor, camera sensor, temperature fingerprint sensor on a single chip.
3. Data Analytics
 - a. Data collected from cross domains shall be fed to the Deep Learning model.
 - b. Raspberry Pi/ AI based chips shall be used for processing of data (edge computing).
 - c. Output shall be the classification of the data into Positive or Negative class.

Outcomes:

1. The prototype model is developed to identify the level of severity of COVID-19 virus in patients.
2. Since edge computing is involved, the model shall take less computation time.

Estimated Time: 6-18 months

Estimated Cost: Rs. 30000/-

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