Good morning everyone , today I Rohan Nyati along with my teammates rajat Mishra and rajat matella is going to give a presentation on the topic “AI BASED SOLUTION FOR CLEANING DUST ON SOLAR PANEL SURFACES”

1st we need to know what are the factors which are influencing dust settlement.

Many parameter influence the deposition of dust on the surface of solar panel. One of the main parameters that influence on accumulation dust is property of dust. Dust characteristics including the type chemical, size and shape etc. Wind velocity either can increase or decrease the dust deposition. Local environment is an important part, which need to consider more on site characteristics, ambient temperature and humidity ’ s. On the other hand, solar panel angle and orientation, glass surface are the parameters which lead to increase the dust on the surface of solar array

So now after knowing all these, the ques comes how are dust particles actually affecting the solar panels?

The accumulated dust on the solar cell panel blocks the cells from the sun’s rays and act as a screening effect which decreases the performance of the solar cells over time until the cell panels are cleaned.

The tilt angle of the solar cell panels affects considerably the amount of accumulated dust on the surface of the panels.

So basically the reduction in solar efficiency due to dust on PV panel is approximately 40%.The efficiency loss is significant of large amount of annual monetary losses.

The main cause of the reduction of solar cells power is the attenuation in transmittance of light due to the dust accumulation on the glass cover.

Dust particles also results in hard depositions on the panel near its frame, often called as cementing. As a result of this, the panel might even get damaged permanently.

So by considering all the aspect mentioned above, it is very necessary to employ a method of automatic cleaning process. With the advancement in technology, it has also been very necessary to develop not only an autonomous cleaning process but also a smart cleaning process

So now my friend Rajat will tell u about the basic design of the project…