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(57) Abstract :
Climate change and the energy problem pushed the adoption of renewable energy. Solar power is a potential and plentiful source of bulk electricity. Solar photovoltaic panels rely largely on meteorological data and weather fluctuations. To solve these challenges, remotely deployed solar panels must gather performance data and anticipate future power output. This study aims to construct a scaled-down prototype of an IoT-enabled datalogger for solar systems in distant locations where human intervention is not feasible owing to weather or other factors. An IoT platform stores and visualizes solar data. The datalogger's acquired data trains machine learning algorithms. Linear regression estimates electricity generation. Comparing findings using polynomial regression and case-based reasoning. The user may also enter the date and time on a webpage. This transaction predicts the temperature, humidity, and electricity production of a solar system. The findings and features confirm the superiority of the suggested power prediction approaches.

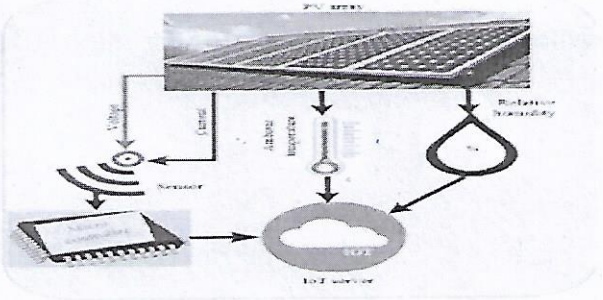

Fig 1. Depicts the Data from the PV panel to an IoT server

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