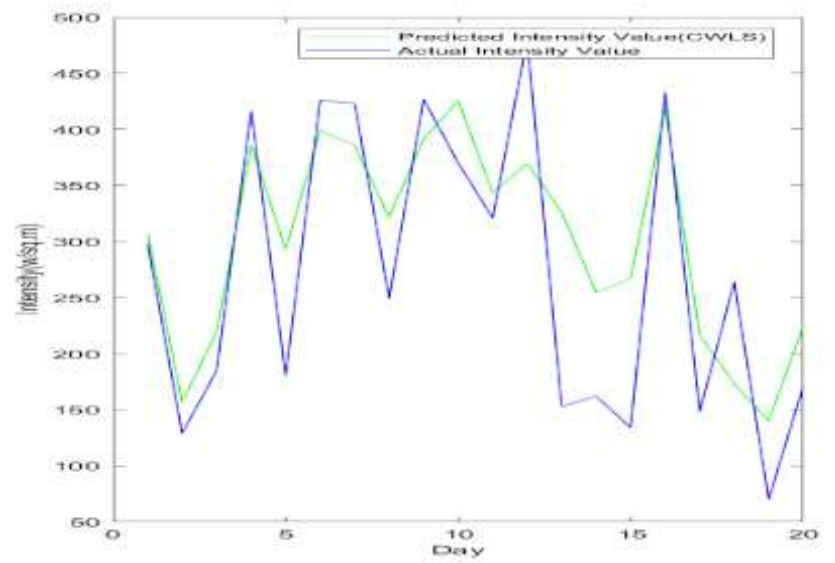
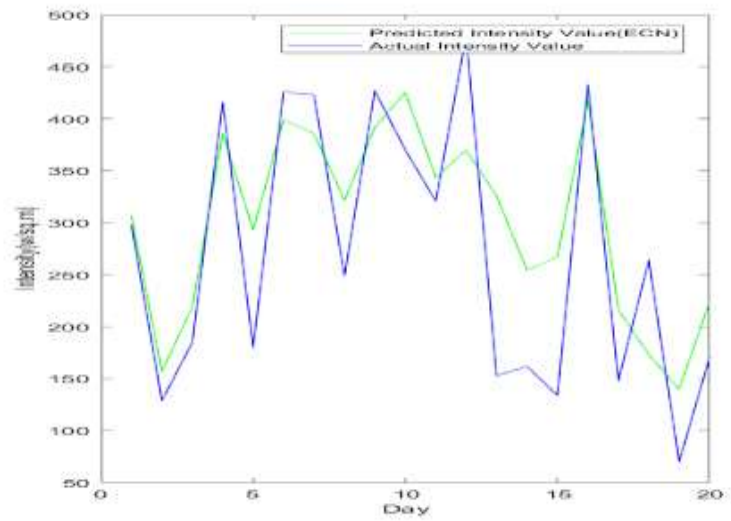
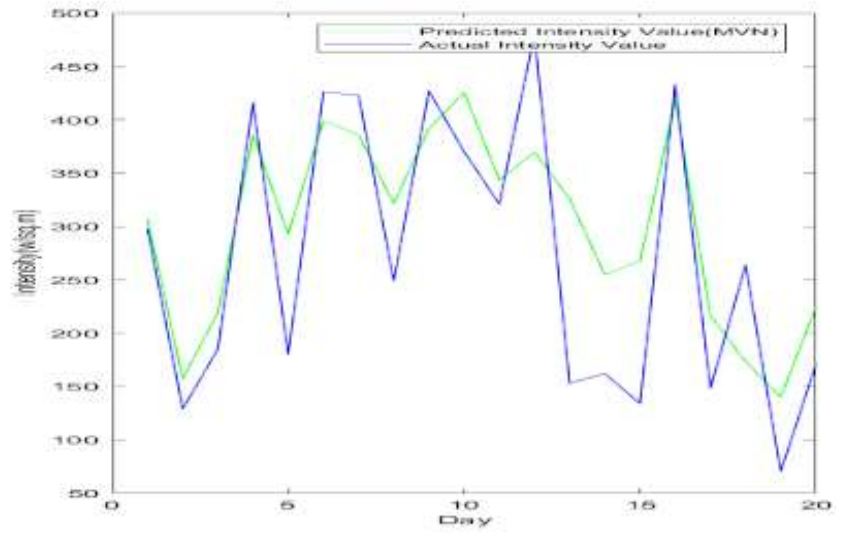


### Format for the Project Submission

Project Id/No	<b>AEL-06</b>
Project Name	Prediction of Solar Energy Generation using Weather Data
Project Members	Mentors – Dr. Swati Arora Mentee – Eklavya Chopra Ashish Priyadarshi Rajkumar Shah
Abstract	<p>Climate change and energy crisis has motivated us to use alternative sources of energies. Solar energy is one of the most abundant and promising source of bulk power generation. Solar Power Generation is highly dependent on local weather and meteorological parameters and cannot be controlled and therefore cannot be controlled or planned for in advance. To make sure that the incorporation of photovoltaic systems is secure and stable, accurate power forecasting is an important aspect in energy generation management. In this project we perform prediction for solar power generation from weather data from a Davis Weather station in Amherst, Massachusetts. We analyze extensive traces of historical data from a weather station to correlate the weather metrics present in the forecast with the solar intensity, in megajoule per square meter, recorded by the weather station. We apply multivariate linear regression method using three different arithmetic techniques viz. MVN (Multivariate normal maximum likelihood estimation) ECM (Expectation maximization algorithm) CWLS (Covariance-weighted least squares estimation) to derive prediction model for solar intensity using multiple forecast matrices, and then analyze the prediction accuracy in each model.</p>

Project Photo



Project Report

[https://docs.google.com/document/d/1Trzrf48sih81NC8CtghR4RfBGWf\\_ty8q6PFkgk\\_d1EY/edit?usp=sharing](https://docs.google.com/document/d/1Trzrf48sih81NC8CtghR4RfBGWf_ty8q6PFkgk_d1EY/edit?usp=sharing)