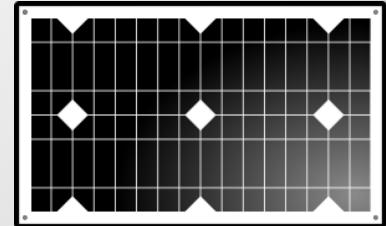


SatelliteSolar.io

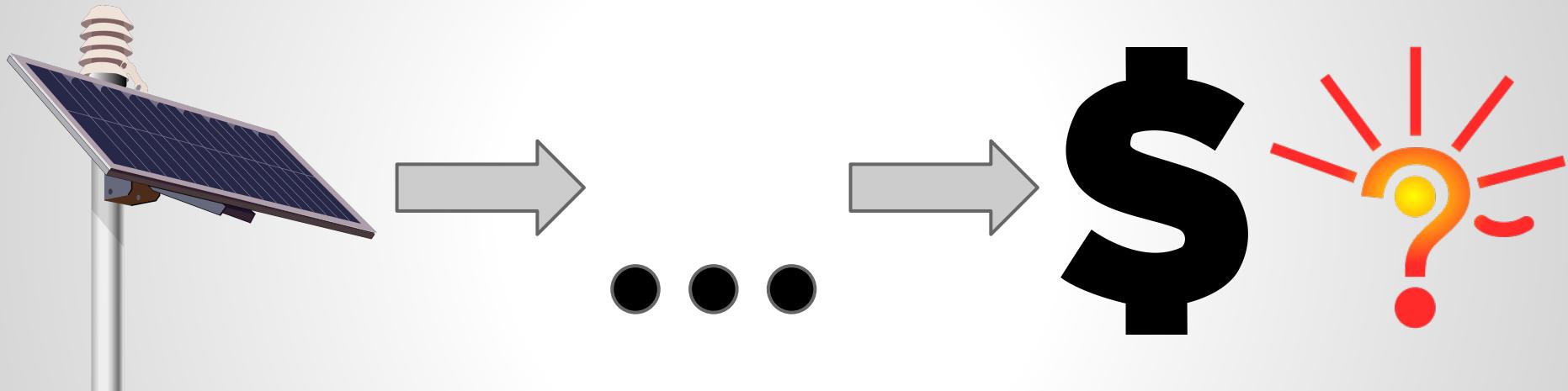
Scott Little

Galvanize DSI Capstone

August 20, 2015



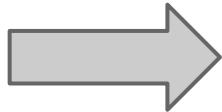
Motivation



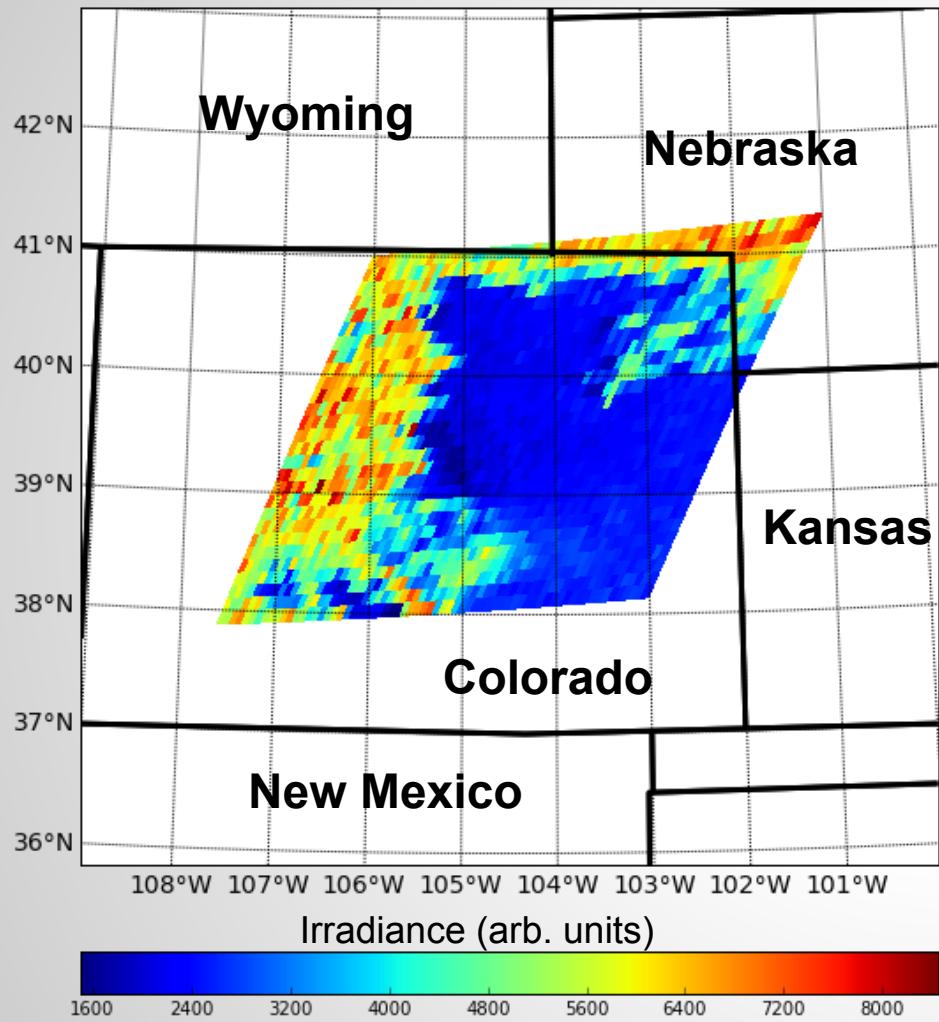
Answer: by estimating solar power for a location and time from satellite imagery



Model flow



GOES 15 - Channel 1



Satellite to sensor model

- Extra trees regressor
- Satellite → Cloud cover
- Cloud cover → AOD

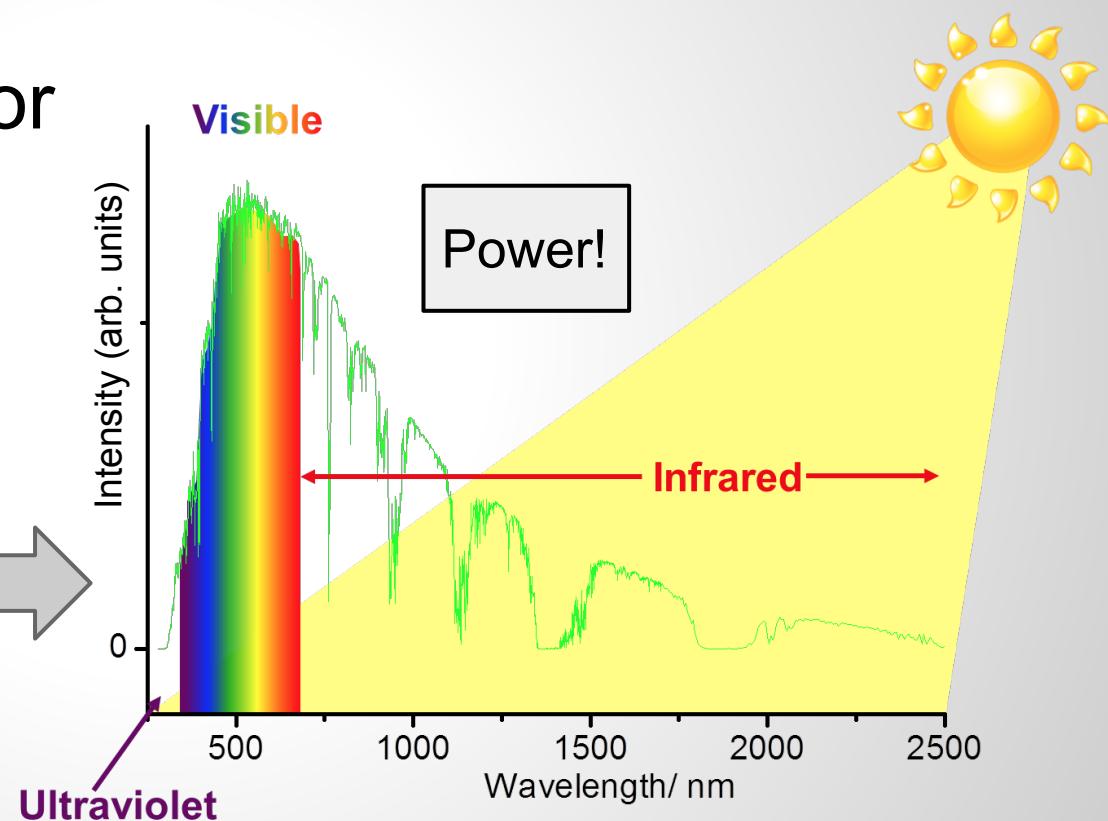
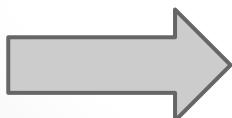


Sensors (14 individual)

Sensor to solar power model

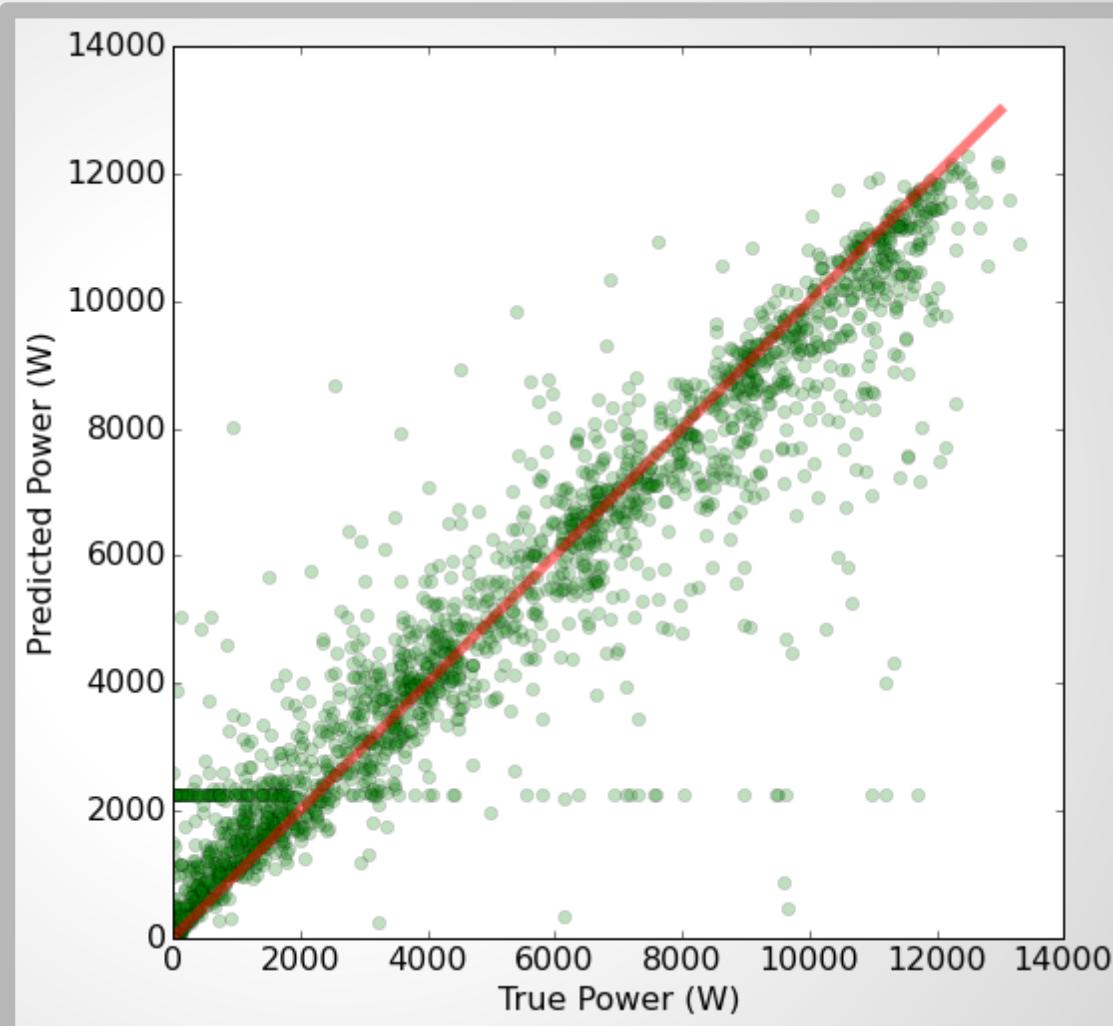
- Extra trees regressor
- Solar panel power prediction

Sensors (14 individual)



Results

$R^2 = 0.96$



SolarSat App

Solar Panel Type

Sanyo

Number of Solar Panels

1

Month

May

Day

9

Hour (UTC time)

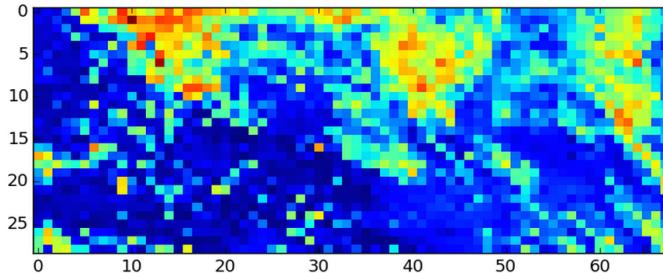
18

Location (Future)

Denver, Colorado

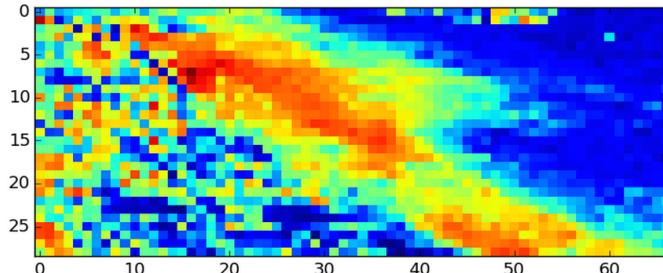
Submit

SolarSat App



The predicted power is: **61 Watts**

SolarSat App



The predicted power is: **37 Watts**

Future and Conclusion

- Implement in more locations and for longer terms
- Web app functionality such as pricing information



Thank you!



Scott Little
SatelliteSolar.io
scott.alan.little@gmail.com