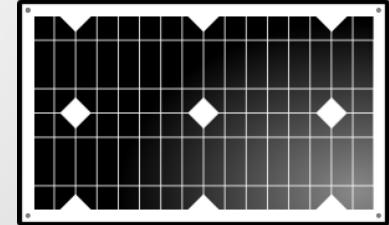


# Satellite Solar

Scott Little  
Galvanize DSI Capstone  
August 20, 2015



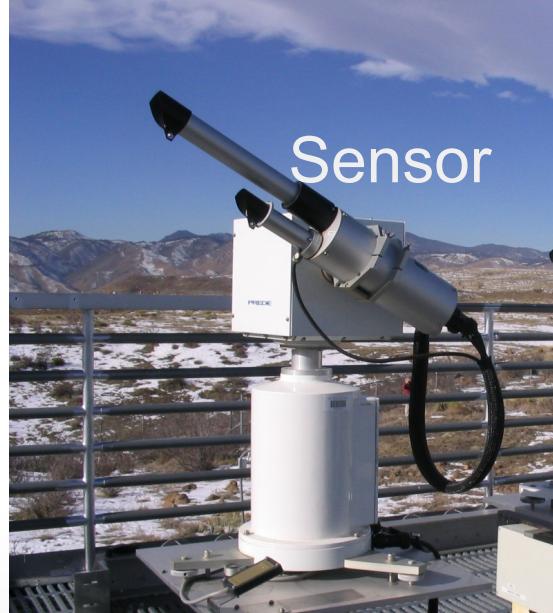
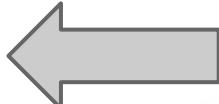
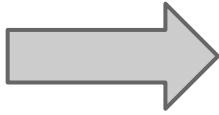


# Motivation

Estimate solar panel power generation for a location and time from satellite imagery



# Model flow



# Satellite to sensor model

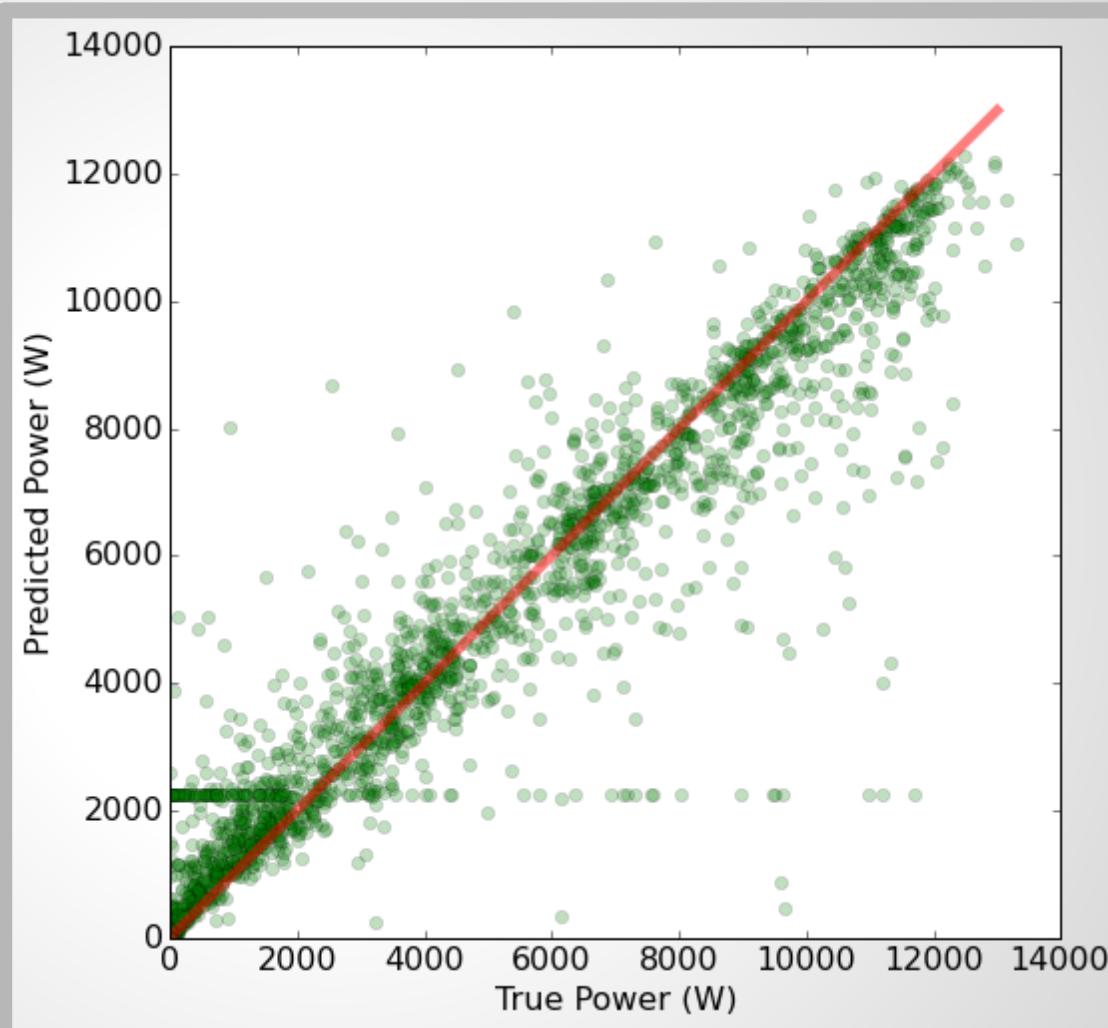
- Extra trees regressor
- Cloud cover, AOD
- Sensor validation

# Sensor to solar panel power model

- Extra trees regressor
- Feature Engineering
- Solar panel power prediction

# Results

$R^2 = 0.96$



# SolarSat App

Solar Panel Type

Sanyo

Number of Solar Panels

1

Month

May

Day

9

Hour (UTC time)

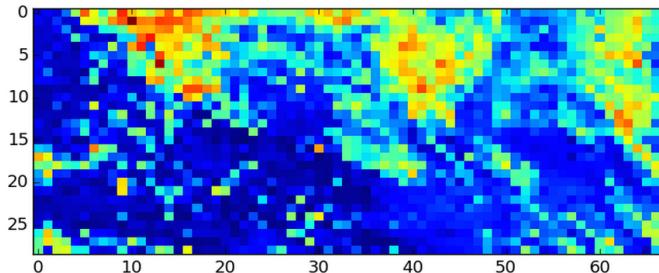
18

Location (Future)

Denver, Colorado

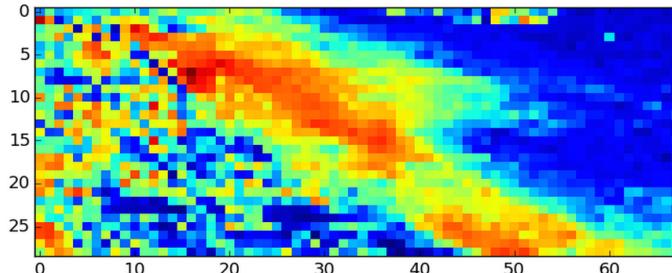
Submit

# 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 based

Thank you!



scott.alan.little@gmail.com