

A stylized illustration of a beach scene. On the left, a surfboard with a purple body and two white diagonal stripes is partially visible. The background is a light blue sky with a single white cloud. Below the sky is a horizontal band of blue representing the ocean, with three white horizontal lines indicating waves. The foreground consists of orange sand dunes with two white stars and several small orange dots scattered across them.

BEACH WATER QUALITY



Hi!, I am
'Timi
Adejumo

AGENDA

- ❖ **BUSINESS PROBLEM**
- ❖ **DATA UNDERSTANDING**
- ❖ **METHODS**
- ❖ **FINDINGS**
- ❖ **CONCLUSIONS**
- ❖ **FUTURE RESEARCH**



STAKEHOLDERS: SURF CLUB





BUSINESS PROBLEM

IS IT SAFE TO SWIM TODAY?



OR





ILLINOIS OCEAN TOURISM & RECREATION INDUSTRY

WORTH \$4B GDP + 96K WORKFORCE AFFECTED BY BEACH CLOSURES

DATA UNDERSTANDING:

~59K SENSORS READINGS (2013-2017)

- CHICAGO DATA PORTAL
- OFFICE FOR COASTAL MANAGEMENT

MACHINE LEARNING MODELS

PREDICTIVE

LOGISTIC
REGRESSION

MODELING

Maximum
Accuracy
~95%

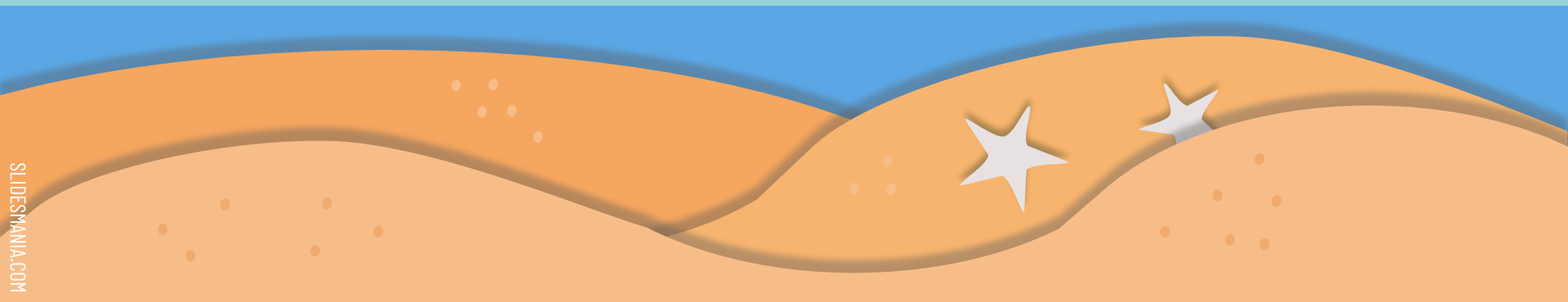
INFERENCE

DECISION
TREE


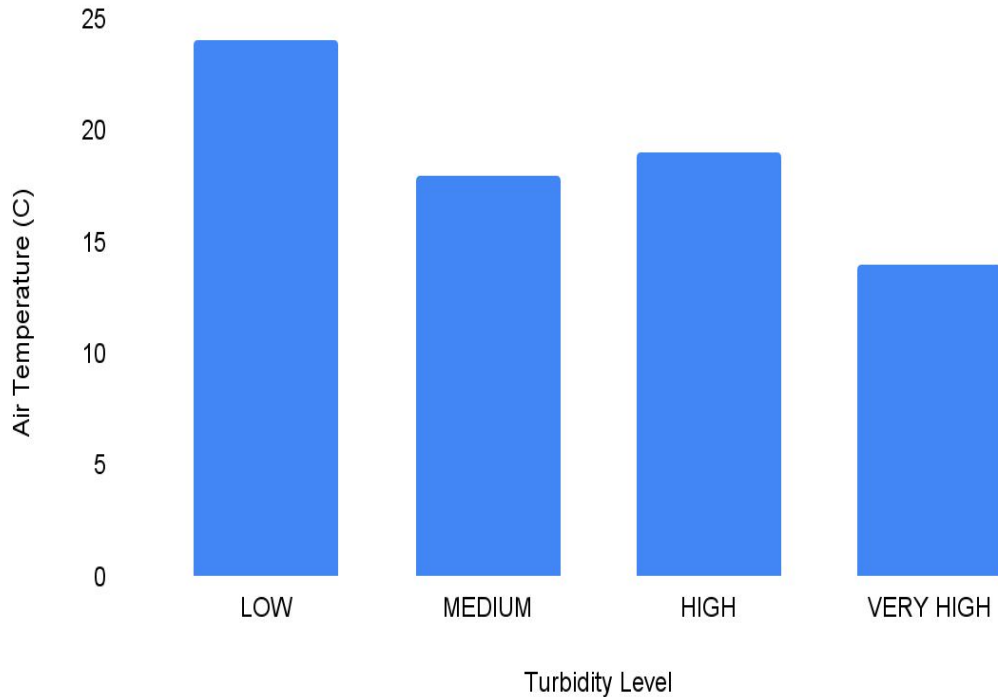
MACHINE LEARNING MODELS:

MAXIMUM ACCURACY

~ 95%

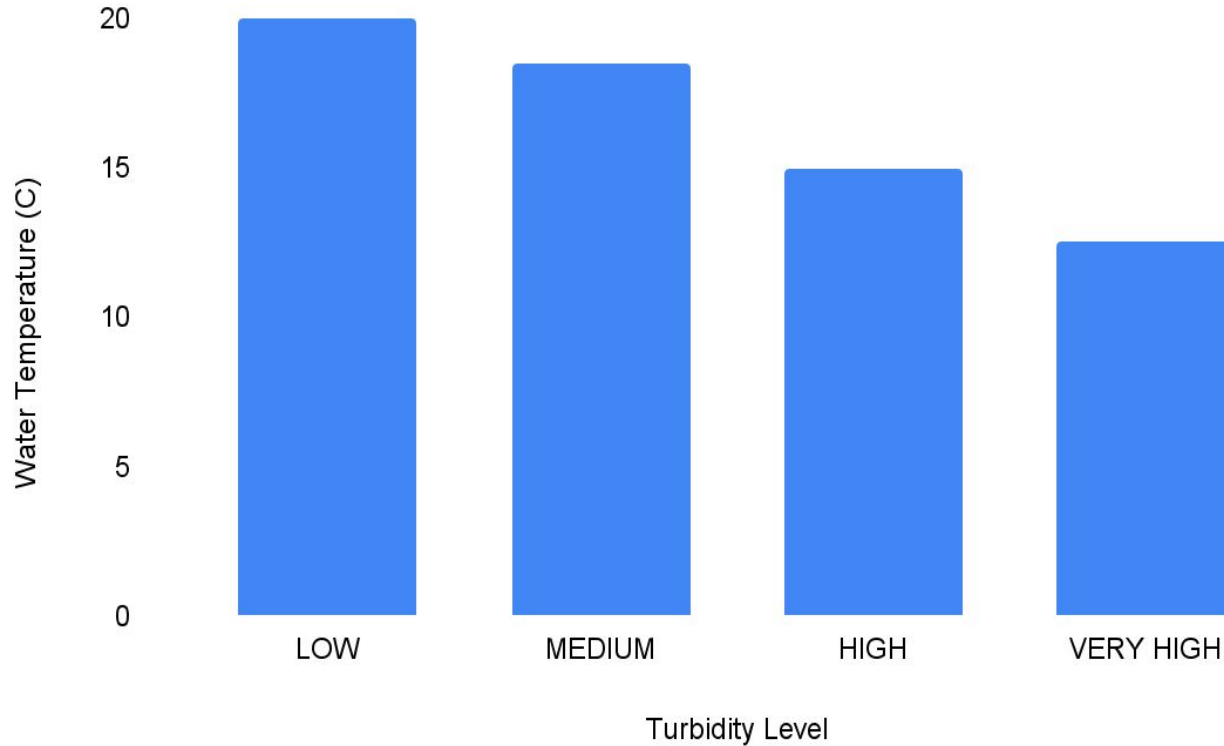


Air Temperature (C) vs. Turbidity Level



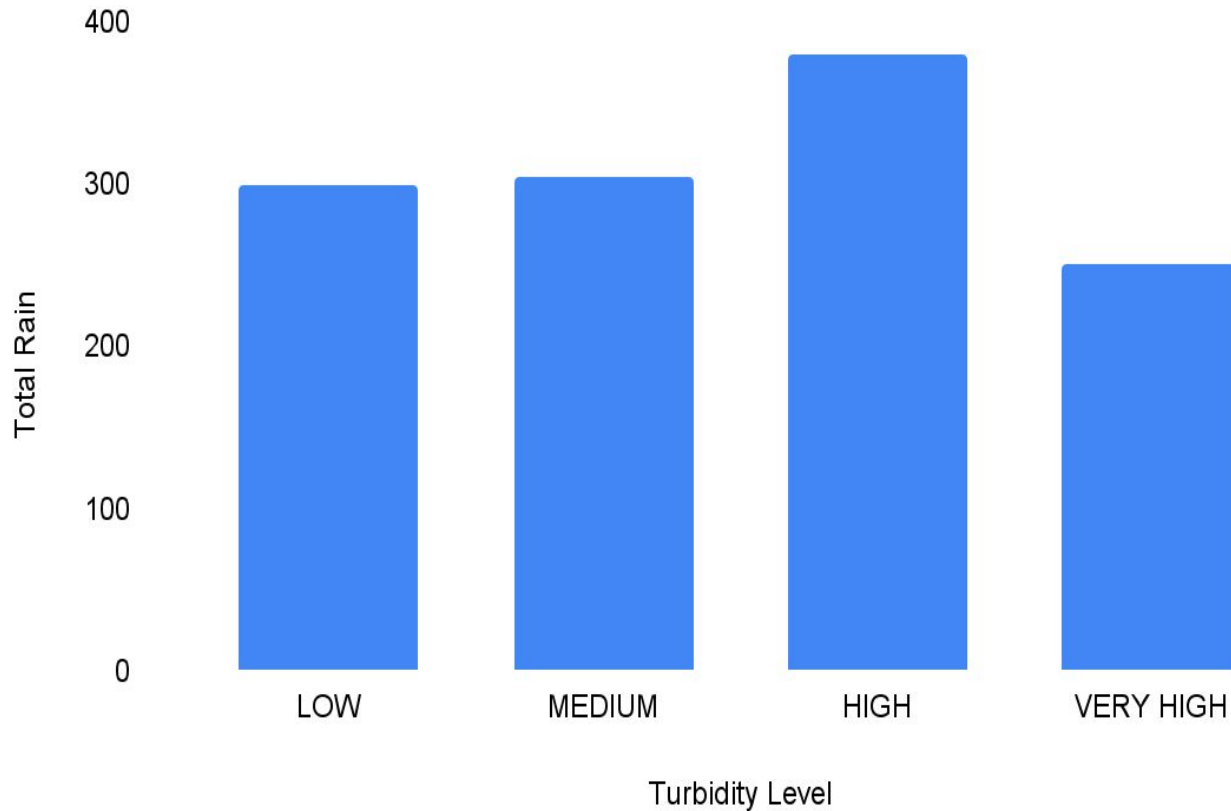
AIR TEMPERATURE
VS.
TURBIDITY LEVEL

Water Temperature (C) vs. Turbidity Level



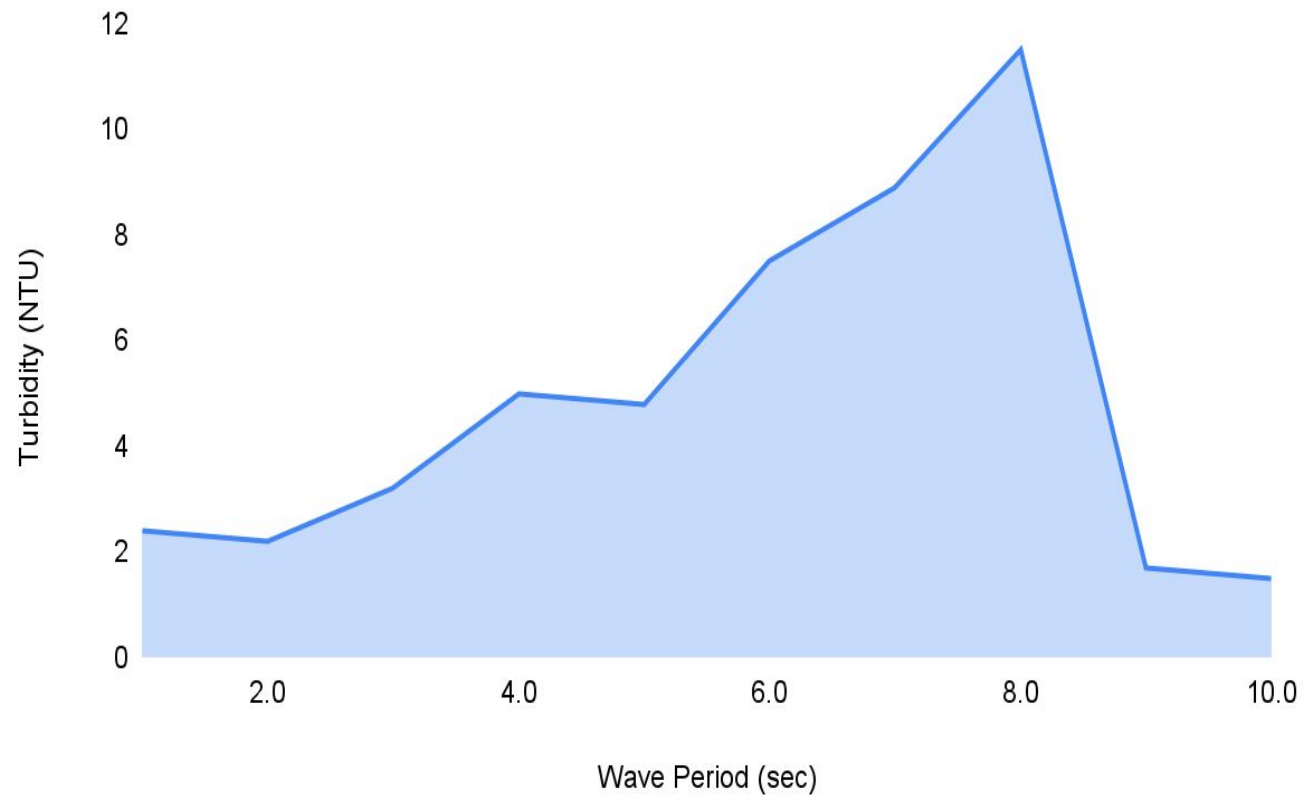
WATER TEMP
VS.
TURBIDITY
LEVEL

Total Rain vs. Turbidity Level



TOTAL RAIN
VS.
TURBIDITY
LEVEL

Turbidity (NTU) vs. Wave Period (sec)



TURBIDITY (NTU)
VS.
WAVE PERIOD(sec)

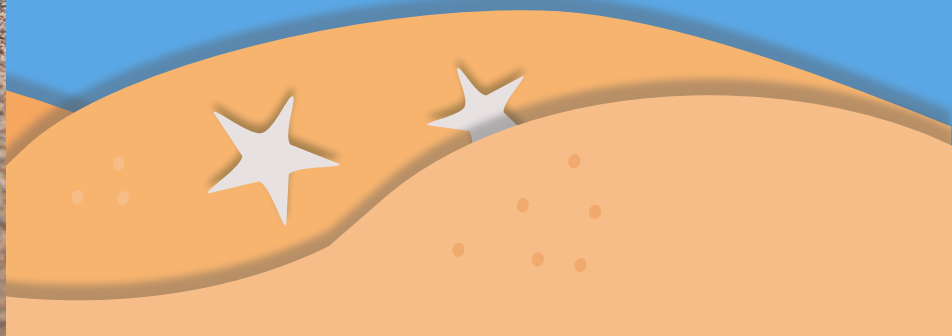
CONCLUSIONS:

- REDUCED SAMPLING TIME
4HRS → 1HR
- SAFER BEACHES





FUTURE RESEARCH

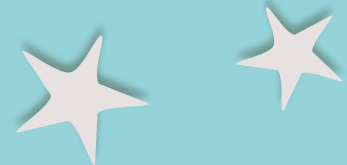
- **STUDY FACTORS AT INDIVIDUAL BEACHES**
 - **STUDY THE INFLUENCE OF HUMAN ACTIVITY**
- 



THANK YOU!



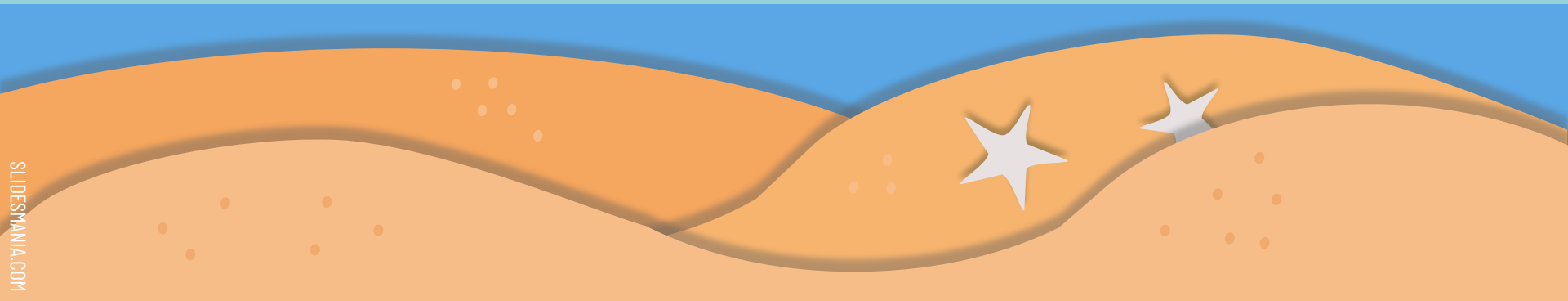
‘Timi Adejumo
(Data Science Graduate, Flatiron School)



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