**DSBA 6162 - Sea Breeze Data Analysis Project**

**Team Members:**

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**Team Name:** Group 7

**Introduction to Problem/Opportunity:**

In his presentation, Joe Merchant asserted that there is a relationship between the occurrence of sea breezes and shark presence at the shoreline. However, there is a lack of available data on when sea breezes have occurred. Based on the existing Carolina coast weather data that has been collected for the past ten years, we aim to create a model that helps to predict the conditions that are most viable for creating a sea breeze.

Some features we plan to look into include, but are not limited to:

* Turbidity
* Wind speed
* Wind direction
* Alpha vector (Wind measurement)
* Cloud cover
* Seawater and land temperature
* Moon phases

We also plan to find documentation of sea breezes within fishing and weather reports to use as our target variable.

**Research Question:**

Using buoy and coastal weather station data from within the last ten years, do various coastal weather phenomena such as sea and land temperature and turbidity accurately predict the presence of a sea breeze on the Carolina coast?

**Data Resources:**

Weather.gov: This datasource provides historical climate and weather data in North Carolina.

<https://www.weather.gov/wrh/Climate?wfo=ilm>

[ALLrecordsNormals (weather.gov)](https://www.weather.gov/media/ilm/climate/ILMrecordsNormals.pdf)

<https://www.weather.gov/wrh/climate?wfo=mhx>

Coastal Data Information Program: CDIP contains data on waves and shoreline changes up to 20 years ago.  
<http://cdip.ucsd.edu/themes/cdip?zoom=auto&tz=UTC&ll_fmt=dm&numcolorbands=10&palette=cdip_classic&high=6.096&r=999&un=1&pb=1&d2=p88>

National Data Buoy Center: NDBC contains historical data on specific stations in North Carolina: <https://www.ndbc.noaa.gov/station_history.php?station=41108>

Below is a link to a guide for how to access and use data from National Data Buoy Center:

<https://www.ndbc.noaa.gov/docs/ndbc_web_data_guide.pdf>

Below is more background information on how to plugin to data source:

<https://www.unidata.ucar.edu/software/tds/current/reference/DatasetSource.html>

**Github Repository:**

<https://github.com/Forrestjohnson2000/6162-Seabreeze>

**Future Work:**

Future work using our research can look into whether there is a significant correlation between the occurrence of a sea breeze and shark attacks.