Meeting with Daniel

whether it is derived (for Turbidity)

WIth Dissolved Oxygen

CDOM sensor

pH

Drivers of Turbidity : mineral sediments (sediments opaque) , Chl-a, CDOM,  (WHat light source /method are being used to measure turbidity)

AT600 by INSITU- Device

TSS -> This is a method-> Filtration process-> Can be related to Chl-a & Mineral Sediments/ Turbidity

Drivers of Chl-a

Light, nutrients-> (Phosphate, Ammonium, Nitrate) Biggest drivers of Chl-a

pH affected by chlorophyll abundance ( during day-night -> Swings )

DO increased by rainfall-> meteorogical data-> Precipitation

Johnathan Maxey

1:36 PM

Drivers of Turbidity:

Mineral Sediments

CHL-a

CDOM

Johnathan Maxey

1:39 PM

AT600 by INSITU

NTU

TSS

0.2um

Johnathan Maxey

1:41 PM

CHLA

light

nutrients (PO4, NH3/NH4, NO#)

NO3

EC-> insignificant for measuring Chl-a

Temperature- rate at which it happens. Chl-a -> more in winter

Swing in pH

Measuring availability of Light (Sunlight)

DO-> should be about a minute for 1 measurement (QA/QC)

specific wavelengths for different algae

harmful algal bloom detection patentable

YSI 660

WQ 2021 AI Research

Does it need regularization

Use momentum and Adam

Use Mini Batches

Algal bloom spectrum- Canada

<https://www.canada.ca/en/environment-climate-change/services/water-overview/satellite-earth-observations-lake-monitoring/remote-sensing-algal-blooms.html>

IDEAS: Check correlation between parameters and see if dimensions can be reduced for highly correlated data (How does this affect accuracy?)

Check clusters with K-means

Check principal components with PCA

Use a simple model first to see bias-variance and then improve model based on the results

Datasets

<https://www.google.com/publicdata/directory>

<https://edg.epa.gov/metadata/catalog/main/home.page>

<http://geodata.grid.unep.ch/results.php>

<https://www.microsoft.com/en-us/research/project/fetchclimate/?from=http%3A%2F%2Fresearch.microsoft.com%2Fen-us%2Fprojects%2Ffetchclimate%2F>

<https://waterdata.usgs.gov/nwis/uv/?referred_module=sw&site_no=01304562>

<https://catalogue.ceh.ac.uk/documents/106844ff-7b4c-45c3-8b4c-7cfb4a4b953b>