

Basic readme

Here is the description of all the files

First there is environment.yml to create the same environment as this repository

Then go to model_development.ipynb and build the model

And then go to model_prediction.ipynb to find the predictions

The predictions will be saved in the ig_stuff folder which will be created when you run the model_prediction.ipynb file.

And then finally go to cleaned_all_the_major_plots.ipynb to see all the plots that are used in the final results section of the thesis

arhab170 "code clean up" 17cc08a · 3 minutes ago 23 Commits		
adigeshp	shape file	3 days ago
cropped_data	all the data that we use	3 minutes ago
model_runs/saved_run	folder where we save all the runs, saved_run folder is the final run	3 days ago
.gitignore	"code clean up"	3 minutes ago
cleaned_all_the_major_plots.ipynb	final analysis after the model run	3 days ago
dummy_df.csv	final result of clustering	3 days ago
environment.yml	"code clean up"	3 days ago
functions.ipynb	functions that we use in the code	3 days ago
min_max_of_all_parameters_2.csv	support material for min_max_scaling	3 weeks ago
model_development.ipynb	main file where we build the model	3 minutes ago
model_prediction.ipynb	main file where we find the predictions	3 minutes ago
number_of_nans_for_each_date.csv	support material for nan cleaning in NDSI data	3 months ago

these are the main input of model_development.ipynb

```
1 about_the_run = "About the run: "
2 run, load_run_number = 2, 66 # 0:"single_run" 1:"keras_tuner" 2:"load_best_model"
3 model_choice = "tf"
4 percentage = 100
5 epochs = 30
6 batch_size=32
7 limit_of_nans_in_a_timestep = 120
8 percentage_of_data_in_summer_months = [0.4] # Desired number of zero values
9 divide_latitude_in_these_many_parts = 5 #latitude has 10 values
10 divide_longitude_in_these_many_parts = 6 # longitude has 14 values
```

if you dont want to train the model just select "2" in run. That would use the pre-trained model

this is for model_prediction.ipynb

```
1 about_the_run = "About the run: "  
2 future_type= "_far_future" #options: "_near_future", "_mid_future", "_far_future"  
3 percentage = 100  
4 model_choice = "tf"  
5 percentage = 1  
6 epochs = 30  
7 batch_size=32  
8 limit_of_nans_in_a_timestep = 120  
9 percentage_of_data_in_summer_months = [0.4] # Desired number of zero values  
10 divide_latitude_in_these_many_parts = 5 #latitude has 10 values  
11 divide_longitude_in_these_many_parts = 6 # longitude has 14 values  
12 climate_data_folder_name = f"{scenario}{future_type}"
```

you just have to select which future you want to make predictions, there are three options