# Solar Power Forecasting

#### WHO AM I?



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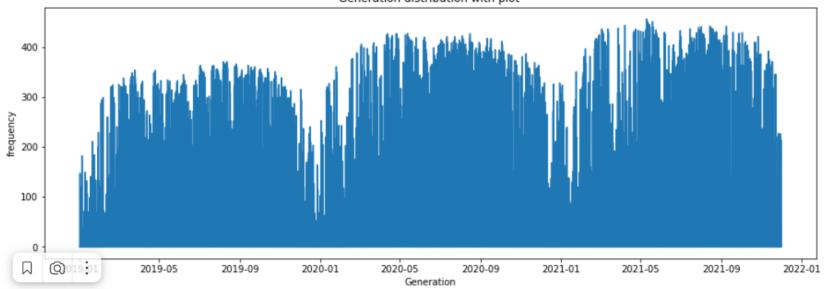
DEÜ Computer Engineering Student

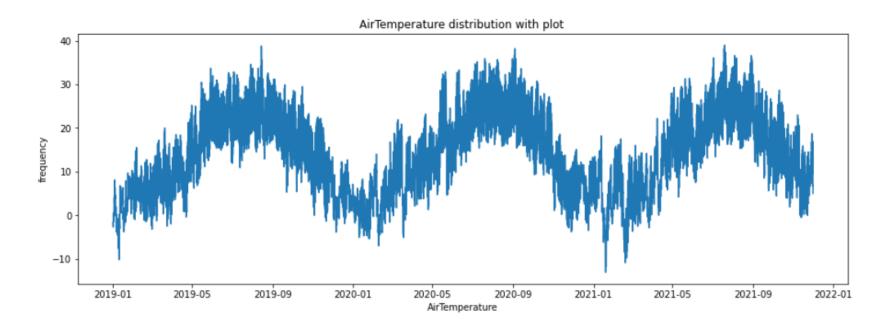
## DATA EXPLORATION

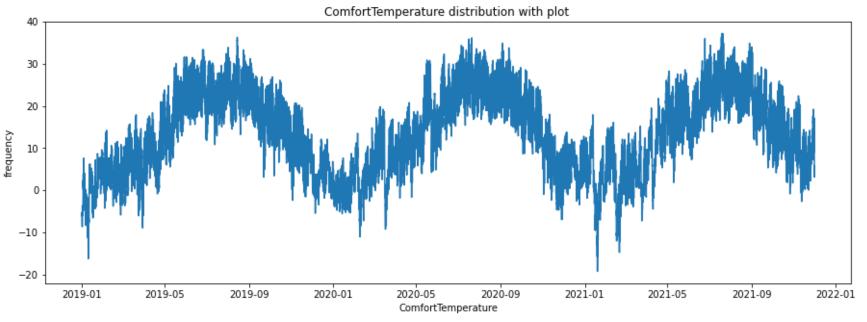
### DATA EXPLORATION

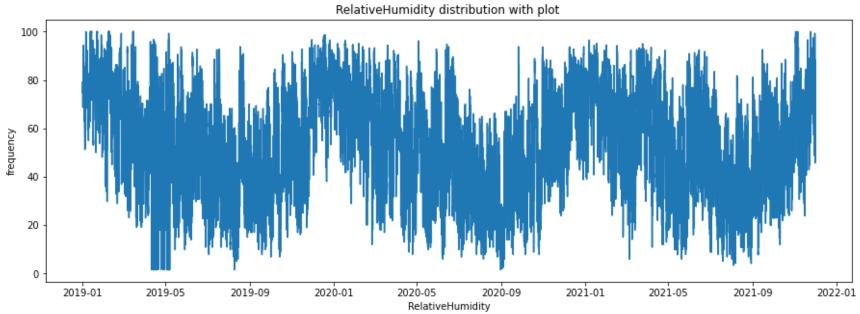
	DateTime	AirTemperature	ComfortTemperature	RelativeHumidity	WindSpeed	WindDirection	WWCode	EffectiveCloudCover
0	01Jan2019 0:00:00	-1,70	-6,10	75,30	3,60	60.0	10.0	6,30
1	01Jan2019 1:00:00	-1,80	-5,30	75,30	2,60	70.0	10.0	4,50
2	01Jan2019 2:00:00	-2,00	-6,00	74,70	3,10	80.0	10.0	5,50
3	01Jan2019 3:00:00	-1,90	-5,90	76,40	3,10	60.0	10.0	7,60
4	01Jan2019 4:00:00	-2,00	-7,10	76,40	4,60	60.0	10.0	6,50











Code ww	
	Rain shower(s), slight
_	
81	Rain shower(s), moderate or heavy
82	Rain shower(s), violent
83	Shower(s) of rain and snow mixed, slight
84	Shower(s) of rain and snow mixed, moderate or heavy
85	Snow shower(s), slight
86	Snow shower(s), moderate or heavy

### FEATURE ENGINEERING

#### **NEW FEATURES**

Partday

Season

Hour

Dayofweek

Quarter

Month

Year

Dayofyear

Dayofmonth

Weekofyear

### MODELS

MODEL	RMSE
XGBoost	21
LSTM	40

```
model = XGBRegressor(
    random_state=42,
    tree_method="gpu_hist",
    gpu_id=0,
    predictor="gpu_predictor",
    **optuna_params
)
model.fit(
    datasets['x_train'],
    datasets['y_train'],
    early_stopping_rounds=optuna_params['early_stopping_rounds'],
    eval_set=[(datasets['x_val'], datasets['y_val'])],
    verbose=1000,
)
```

```
model = Sequential()
model.add(LSTM(64,return_sequences=True, input_shape=(lstm.shape[1], lstm.shape[-1])))
model.add(Dropout(0.5))
model.add(LSTM(20,return_sequences=False))
model.add(Dropout(0.5))
model.add(Dense(1))
model.compile(loss='mse', optimizer='rmsprop')
```



## QUESTIONS