Time	Temperature
5:00 am	59 °F
6:00 am	59 °F
7:00 am	58 °F
8:00 am	58 °F
9:00 am	60 °F
10:00 am	62 °F
11:00 am	64 °F
12:00 pm	66 °F
1:00 pm	67 °F
2:00 pm	69 °F
3:00 pm	71 °F
4:00 pm	71 °F
5:00 pm	71 °F
6:00 pm	69 °F
7:00 pm	68 °F
8:00 pm	65 °F
9:00 pm	64 °F

yyyy:mm:dd hh:mm:ss

augmented dickey fuller

Time	Temperature	cloud cover	dew point	humidity	wind
5:00 am	59 °F	97%	51 °F	74%	8 mph SSE
6:00 am	59 °F	89%	51 °F	75%	8 mph SSE
7:00 am	58 °F	79%	51 °F	76%	7 mph SSE
8:00 am	58 °F	74%	51 °F	77%	7 mph S
9:00 am	60 °F	74%	51 °F	74%	7 mph S
10:00 am	62 °F	74%	52 °F	70%	8 mph S
11:00 am	64 °F	76%	52 °F	65%	8 mph SSW
12:00 pm	66 °F	80%	52 °F	60%	8 mph SSW
1:00 pm	67 °F	78%	52 °F	58%	10 mph SW
2:00 pm	69 °F	71%	52 °F	54%	10 mph SW
3:00 pm	71 °F	75%	52 °F	52%	11 mph SW
4:00 pm	71 °F	78%	52 °F	52%	11 mph SW
5:00 pm	71 °F	78%	52 °F	52%	12 mph SW
6:00 pm	69 °F	78%	52 °F	54%	11 mph SW
7:00 pm	68 °F	87%	53 °F	60%	12 mph SW
8:00 pm	65 °F	100%	54 °F	66%	11 mph SSW
9:00 pm	64 °F	100%	55 °F	72%	13 mph SSW

Variable y1	Variable y2
$y1_{t-n}$	$y2_{t-n}$
...	...
$Y1_{t-2}$	$Y2_{t-2}$
$Y1_{t-1}$	$Y2_{t-1}$
$y1_{t}$	$y2_{t}$

$$y_1(t) = a_1 + w_1 11 * y_1(t-1) + w_1 12 * y_2(t-1) + e_1(t-1)$$

$$y_2(t) = a_2 + w_1 21 * y_1(t-1) + w_1 22 * y_2(t-1) + e_2(t-1)$$

y(t) = a + w*y(t-1) +e

Akaike Information Criterion

The Akaike Information Criterion, or AIC for short, is a method for scoring and selecting a model.

It is named for the developer of the method, Hirotugu Akaike, and may be shown to have a basis in information theory and frequentist-based inference.

This is derived from a frequentist framework, and cannot be interpreted as an approximation to the marginal likelihood.

The AIC statistic is defined for logistic regression as follows (taken from "The Elements of Statistical Learning"):

- AIC = -2*ln(likelihood) + 2*k,
- AIC = -2/N * LL + 2 * k/N

Where *N* is the number of examples in the training dataset, *LL* is the log-likelihood of the model on the training dataset, and *k* is the number of parameters in the model.

The score, as defined above, is minimized, e.g. the model with the lowest AIC is selected.

Bayesian Information Criterion

The Bayesian Information Criterion, or BIC for short, is a method for scoring and selecting a model.

It is named for the field of study from which it was derived: Bayesian probability and inference. Like AIC, it is appropriate for models fit under the maximum likelihood estimation framework.

The BIC statistic is calculated for logistic regression as follows (taken from "The Elements of Statistical Learning"):

- BIC = -2 * LL + log(N) * k

Where *log()* has the base-e called the natural logarithm, *LL* is the log-likelihood of the model, *N* is the number of examples in the training dataset, and *k* is the number of parameters in the model.

The score as defined above is minimized, e.g. the model with the lowest BIC is selected.

Arima:https://towardsdatascience.com/arima-simplified-b63315f27cbc