question   **95** views

ARIMA for future power bill estimation

This might be a silly question, but would an ARIMA model be a suitable way to calculate the average value ones power bill may be in the upcoming month? With S = 12 you could account for monthly seasonality as the average is probably drastically different during Summer months compared to Spring.

I could see one possible downside being that if the customer in question is a newer customer then you likely wouldn't have enough information to really calculate a good average for each month. If we're assuming the customer has been around for a while, would this be suitable?

Just a thought!

week8   hw8

Updated 1 day ago by Kyle Foerster

the students' answer, where students collectively construct a single answer

ARIMA is certainly suitable model for load forecasting.

Updated 22 hours ago by Akylas Stratigakos

followup discussions for lingering questions and comments

● Resolved   ○ Unresolved

Matthew Nguyen   10 hours ago
Depending on how utilities are structured, it may be possible to use prior history for the address on record. Where I am now, they have all of the historical information on the address and household size (this is used for initial estimates on how much you will pay and then this is adjusted annually). Based on this, you could use that to up or down adjust based on the household size for new customers.

● Resolved   ○ Unresolved

Tony ElHabr   9 hours ago
This discussion brings up a good talking point about the granularity of a time-series model. Should we simply try to predict a single value per month? Or, could we see improved accuracy if we forecast daily or hourly values and aggregate all values across a given time period (e.g. a month) to come up with the final prediction. Modeling daily and hourly values has the benefit of accounting for weekday vs. weekend behavior, as well as intra-day (i.e. hourly) seasonality, which should be apparent in higher power usage immediately before and after business hours during weekdays, when home cooling/heating and other large machines (e.g. washer and dryer) are most heavily used.