2022, September 8th

Many thanks for your questions and comments on our manuscript, "Stride-TCN for energy consumption forecasting and its optimization". From there, we have made adjustments to improve our article.

We have revised the paper and presented the information in italics, following each reviewer's questions. Changes made in the manuscript are marked using track changes, and we also take notes with each revision briefly on the right side. The revision has been developed in consultation with all coauthors, and each author has approved the final form of this revision. We appreciate your consideration.

Sincerely,
Jin Young Kim

Reviewer #2

1. What is the difference between Stride TCN and a Convolutional network with different convolutional layers having a stride?

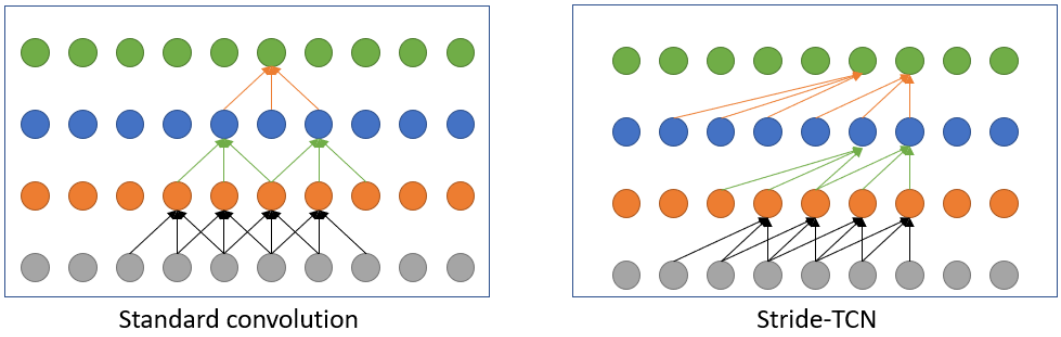

Figure 1

To answer the question, we first suppose that the "Convolutional network with different convolutional layers having a stride" that the reviewer mentioned here is the "Standard Convolutional network", not use the "Casual Convolutional layer". Our Stride-TCN (Stride Temporal convolutional networks), where Stride is a parameter of the neural network's filter that controls how the filter convolves around the input volume, is inspired from the conventional TCN and acquired it the stride mechanism, explained in lines 84-89.
Although "Stride TCN" and "CNN with different convolutional layers having a stride" both involve convolutional operators, Stride TCN has a remarkable point. As depicted in Figure 1, Stride-TCN uses causal convolutions with individual strides parameters at different layers. Causal convolutions are a type of convolution used for temporal data, ensuring that the output at time t derives only from inputs from time t – 1, while standard convolution does not take the direction of convolution into account. Stride-TCN ensures the output value must only depend on values positioned earlier in the input sequence to prevent information leakage from future to past.

2. Page 5 of 15, paragraph 1 states that "The data analysis found that the energy consumption data are cyclical". Was this data analysis only through manual observation OR some other statistical data analysis techniques were applied to find out the cyclical pattern?

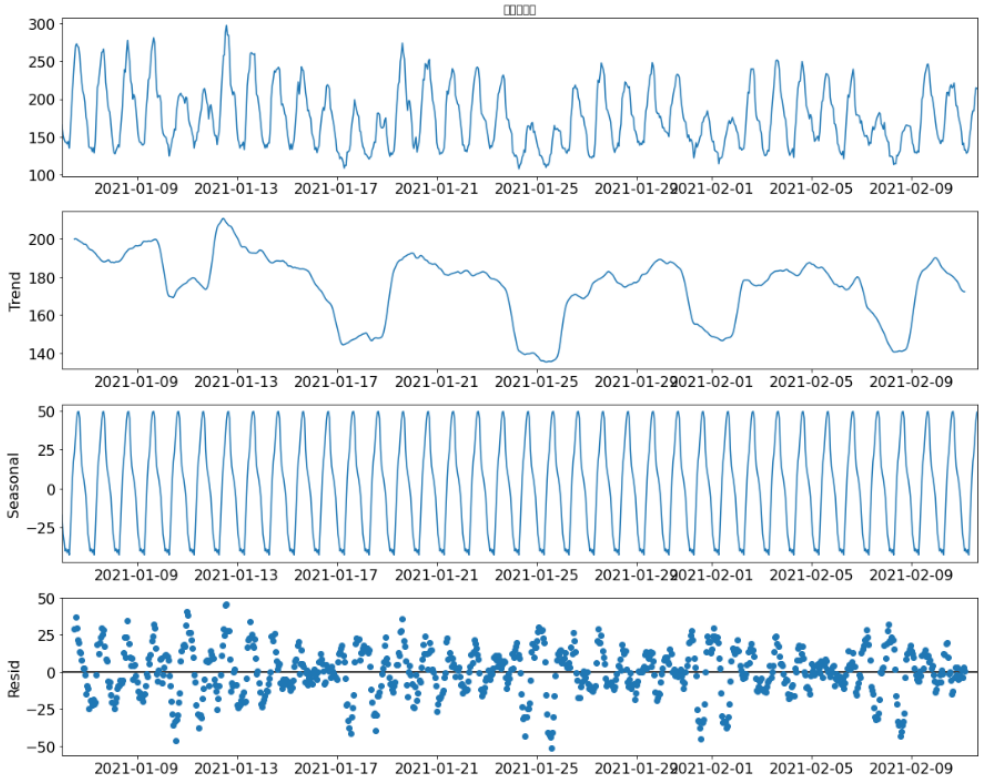

Figure 2

After revising the manuscript and investigating other studies in time-series data, we supposed that the term "cyclical" is incorrect and had it replaced by the term "seasonal", at line .
In particular, We have analyzed data using the time-series decomposition technique, calculating correlation and manually observing the seasonal pattern by thresholding the correlation values. We have also inspected several public datasets about energy consumption and found that most of them possess seasonal patterns.
For example, the Figure above shows a sample in CNU energy consumption dataset, which is decomposed into three components, trend, seasonal and residual. The above result shows that the seasonal component's value is 24 hours.

3. Reference 4 seems incomplete.

   We have revised the information.

4. Some typos can be found, which should be improved, e.g.: Page 1 of 15: line 28; Page 6 of 15: line 201 and page 7 of 15: line 225 (some non-English characters)

   All typo errors have been fixed.