View Reviews

Paper ID
11

Paper Title
Scalable Energy Breakdown Across Regions

REVIEWER #3 (KYRI BAKER)

REVIEW QUESTIONS

1. What is your overall rating?
Strong accept

2. How novel is the work?
Novel

3. Relevance to NILM workshop
Highly relevant

4. What format would recommend accepting the paper as?
Oral presentation

5. Mention 2 or more strengths
The proposed framework is a novel approach to looking at increasing energy savings within homes by modeling appliance consumption through removing external factors s weather.

I also appreciate that the code has been open-sourced to the community.

6. Mention 2 or more weakness
As mentioned in the limitations, the framework is only accurate when both the target and source domain have the same appliances. I think this is a big weakness - maybe th address this in future work?

7. Detailed author comments.
This was a well-written paper and provided very interesting results to the NILM community from a new perspective.

REVIEWER #2 (WILFRIED ELMENREICH)

REVIEW QUESTIONS

1. What is your overall rating?
Strong accept

2. How novel is the work?
Novel

3. Relevance to NILM workshop
Relevant

4. What format would recommend accepting the paper as?
Oral presentation

5. Mention 2 or more strengths
One strength of the paper is the chosen modelling approach. An independent energy breakdown via statistical transfer learning seems to be a promising solution. Therefore, addresses a novel and timely topic.

The paper is well-written and the authors clearly reported their findings.

6. Mention 2 or more weakness
As a consequence of the absence of metering infrastructure, a sort of "dead-reckoning problem" could arise and influence the performance of the system.

A potential problem could be, that the generated models may include prejudices/biases regarding certain regions. This issue could be further explored in future work.

7. Detailed author comments.
The authors compare the energy breakdown across San Diego and Austin. We would suggest adding another city with even more distinct climatic conditions such as Toront Stockholm.

The constructed models seem to consist of linear relationships. A potential improvement could be achieved by the introduction of a non-linear approach. Of course, this wou more complex models but processes in nature are rarely linear.

8. Confidential comments to the TPC chairs.
The full paper version of this contribution was already accepted at AAAI 2018. This is not surprising since it is a high-quality paper with a relevant contribution. We still recon the authors giving a talk about their work at the NILM workshop.

REVIEWER #1 (JOSÉ ALCALÁ)

REVIEW QUESTIONS

1. What is your overall rating?
Strong accept

2. How novel is the work?
Novel

3. Relevance to NILM workshop
Highly relevant

4. What format would recommend accepting the paper as?
Oral presentation

5. Mention 2 or more strengths
1. The energy consumption in households is highly house-specific and season-specific. This counts as one of the major challenges in NILM. This is one of the few studies th problem.

2. Tha paper is well structured and well written.

6. Mention 2 or more weakness
1. It could be very difficult to follow for the non-expert in the field.

2. Some fragments are repeated word by word.

7. Detailed author comments.
The energy consumption pattern in households is very heterogeneous, not only between seasons but also across regions (e.g. different appliances are used). This fact is one challenges in NILM to generalize well. This highly affects international companies because the need to deploy new trials in new countries increases the expenses. This pape novel solution to transfer the energy disaggregation knowledge between regions, reducing the cost of hardware installation.

Overall, the paper is well written and have few typos. Besides, the idea is quite novel. The reviewer only has minor comments:

1. In Section III, half of the 3rd paragraph is literally copied from the 3rd paragraph in Section I: "Intuitively, each appliance factor...". This makes the reading a bit tedious.

2. In Section IV.B, 2nd paragraph: "Since MF was shown to be better than the state-of-the-art NILM approaches, we do not compare our work against NILM". This is a very statement. The reviewer recommends giving more details about this fact (e.g. in what conditions).

3. The markers in Fig.2 and Fig3. are very large; which makes difficult to follow the lines. The reviewer recommends reducing the marker size.

4. A newline is missing between Equation 1 and the next paragraph.