



Reflective writing in the theory/practice transfer paper

Matriculation number: 8240

Accepted topic
of the transfer paper: What electricity usage can tell about private households

These questions are intended for reflection and support during the preparation of your transfer paper. We recommend you to ask yourself recurrently these questions before, during, and after the elaboration of the transfer paper in order to develop a scientifically founded paper. Please answer the questions with one or two sentences (enumerations are also possible) and do not forget to refer to the corresponding chapter in your transfer paper. In contrast to the transfer paper and to the assignment clarification, writing in the first person is desired within the framework of reflective writing. This form is an integral part of the assessment of the theory/practice transfer paper and therefore must be included for evaluation along with the paper itself.

You can use 2000 characters (without spaces) as a guideline for answering the questions.

Which are the central research questions of my topic?

The central research question is what appliances in a common household can be identified using electricity usage data captured with inexpensive hardware.

Which objective do I want to achieve with the elaboration of the transfer paper and to what extent did I accomplish this at the end?

The main goal is to uncover what kind of devices can be identified easily, what information can be derived from this and how this can be used. Additionally, it was of interest how complicated and expensive the process of capturing data in a common household is.

These two goals have been achieved as an inexpensive solution has been proposed and tested which captures instantaneous electric current. A number of appliances have been identified and verified based on this data.



How are my central questions/topics and the content that I have learnt during my academic studies connected?

The central research question reaches into the topic of data sensitivity. Having a better understanding of the information that can be derived from electricity usage data gives insights into the necessary protection requirements not only for private households but also for corporate environments.

What information have I drawn on for my work and why have I chosen this source?

The majority of information has been collected from journal articles and conference papers. This source has proven itself as very useful since this is a very active field of research especially in the areas that intersect machine learning algorithms.

Additionally, own data has been collected and evaluated. This served as a verification that the methods proposed in those aforementioned research papers can be applied using inexpensive hardware.

What is my approach to answering the research question?

Primarily through the accumulation of knowledge from existing research papers. This knowledge has then been (partially) verified on the household of the author as described in the text box above.



Where do you see my personal contribution to answering the research question?

The primary personal contribution was the setup and collection of the electricity usage data from the authors household. The secondary contribution was the accumulation of existing research in the field into a comprehensive text.

What have I learnt from writing this transfer paper and what would I do differently next time? A reference to a chapter is optional in this case.

Staying unbiased in regards to interpreting personal data has proven remarkably difficult. Even though a few weeks have passed between data collection and interpretation, it has not been a complete black-box interpretation. In this regard it would make more sense in the future to capture data from a foreign household of which no inside knowledge is available.
(Section 3.2)

Upload the completed reflective writing form (as a separate document) together with your transfer paper in the Campus Information System (CIS).