Electrical Engineering Concepts

Rhetorical Analysis of Lab Reports

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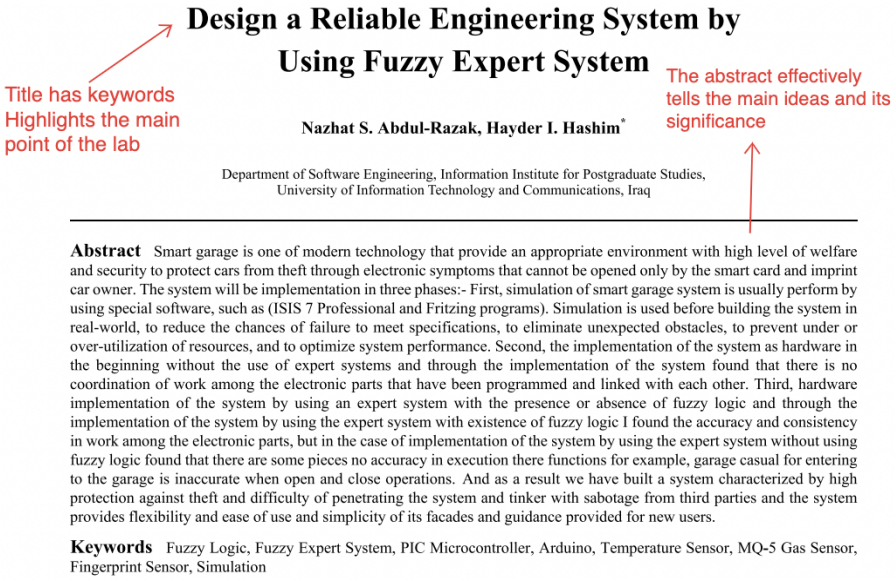
Introduction

This report will annotate two lab reports: Concept of Solar and Pedal Powered Electric Bicycle by Sathisha K., Deepesh S. Kanchan and Design a Reliable Engineering System by Using Fuzzy Expert by Nazhat S. Abdul-Razak, Hayder I. Hashim. Questions like how electrical engineering laboratory reports are written motivated my study.

Abstract

Figure 1

Annotation of title & Abstract



Note. Zewdie, Y. (2021). *Design a reliable engineering system by using fuzzy expert system* [PDF].Online. from http://article.sapub.org/10.5923.j.eee.20170701.01.html#Ref

Both reports included abstracts. Their titles were specific and informative. I discovered that these laboratory reports almost always have well explained methods, with clear and the implications

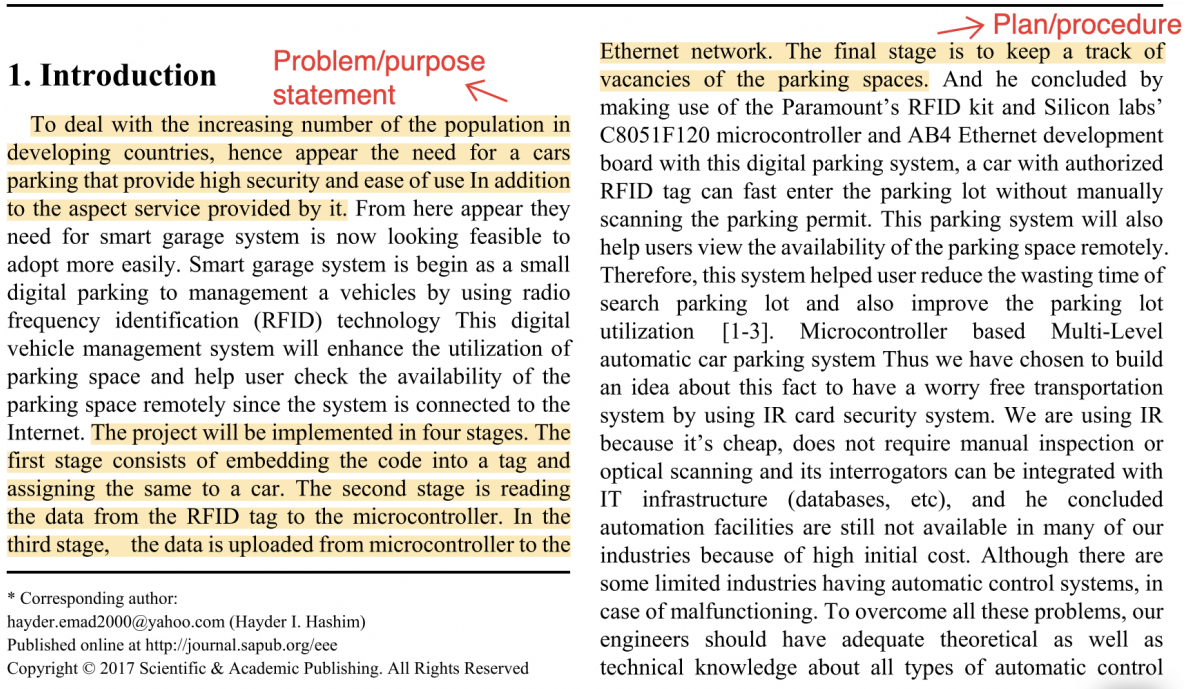
are cleaner energy. The Fuzzy Expert report had a clear problem statement, where multiple problems were stated. The methods used are also mentioned such as softwares required inside cars, and simulations needed. Multiple steps are mentioned for the methods used. The last statement in the abstract clearly stated the results. However, the conclusion/recommendation was missing. (Abdul-Razak & Hashim, 2017)

In the Electric Bikes report, global warming and the growing decrease in traditional resources is stated as the problem. The method is clear, pedalling is used to initiate the motor and solar energy is utilized. The results statement and conclusions were bundled together. Recommendations were missing in this section.(K. & Kanchan, 2017)

Introduction

Figure 2.

Annotation of Introduction



Note. Zewdie, Y. (2021). *Design a reliable engineering system by using fuzzy expert system* [PDF].Online. from http://article.sapub.org/10.5923.j.eee.20170701.01.html#Ref

In my opinion both lab reports had very strong introductions. The background information was thoroughly explained. In the electric bikes articles, I found the introduction to be very short, to only about two paragraphs. There was important information on the reason behind the study, stating that nonrenewable resources would eventually be depleted, and a new method for obtaining energy is needed. The problem/purpose statements were clear. However, the introduction lacked plan/procedures for testing, description of the rest of the report, and the definitions of terms/limitations/assumptions. The second article mentioned that the problem was geared towards the growing population and the need for theft protection. The plan/procedure was clear and divided into four stages. Limitations were also mentioned. Unfortunately, terms/limitations/assumptions were not defined in this section.

Materials and Methods

Only one laboratory report included a section named materials and methods. The electric bike laboratory report had a thoroughly described materials and method section. The section began with a description of a few of the materials. However, not many images were present to show how the instruments looked. The setup was also not very lengthy. The procedure was well written. Time and setting were included. There was no information on any difficulties encountered, or any modifications taken. The information was well organized chronologically. Although the laboratory report on fuzzy expert systems did not have the heading ‘materials and methods’, there were very clear descriptions of both the materials and the methods taken. There

were clear pictures taken for the various materials, to help readers visualize the procedure. The order was chronological, although the section did not immediately begin with the materials. The only difficult part is that the audience for this report is very specific to people who have a good understanding of all the engineering technical terms, which makes this report hard to understand and follow.

Results and Discussions

Both reports thoroughly summarized the final results. Both reports also grouped the results with the discussion. Graphs were included in both reports. I think that the electric bike report had a better way of emphasizing the major findings. As mentioned above, the other laboratory report had a very specific audience, so I found it particularly hard to understand. However, it was really good in organizing the discussion section. It offered good explanations on some of the findings.

Conclusion

The conclusion section in both laboratory reports thoroughly summarized the main concepts discussed throughout the paper. No new ideas were introduced. The purpose was restated in both laboratory reports. I found it difficult to understand the implications of the findings of the lab in the Design a Reliable Engineering System by Using Fuzzy Expert report. However, both reports were well summarized.

Acknowledgments

Neither of the laboratory reports I chose had an acknowledgment section.

References and Appendix

All references were cited properly and clearly. Each references were numbered, and in-text citation used with the numbering.

Conclusion

In conclusion, the two laboratory reports had a great overall report. Concept of Solar and Pedal Powered Electric Bicycle by Sathisha K., Deepesh S. Kanchan and Design a Reliable Engineering System by Using Fuzzy Expert by Nazhat S. Abdul-Razak, Hayder I. Hashim had similarities and differences. The first report was geared towards a wider audience, which made it much easier to understand. However, the second report was very well organized and explained that it was much more knowledgeable.

References

Abdul-Razak, N. S., & Hashim, H. I. (2017). *Design a reliable engineering system by using fuzzy expert system*. Electrical and Electronic Engineering. Retrieved November 7, 2021, from http://article.sapub.org/10.5923.j.eee.20170701.01.html#Ref. (Abdul-Razak & Hashim, 2017) (Fg.1)(Fg.2)

K., S., & Kanchan, D. S. (2017). *Concept of solar and pedal powered electric bicycle*. Electrical and Electronic Engineering. Retrieved November 7, 2021, from http://article.sapub.org/10.5923.j.eee.20170702.03.html. (K. & Kanchan, 2017)

Self Reflection

I grew a much better understanding of writing laboratory reports while writing this report. Navigating the web to find reports which were of interest to me at first seemed very intimidating, however, it became very easy after narrowing down my search to my area of study. I found the two articles I used in this report by searching up my major, electrical engineering. The report on Fuzz Expert system was one of the first ones I found. It was a little hard to find the report on electric bikes, but I think it was worth it! It was very easy to understand and simple.

Reading a report in my major was a first for me, it was a little more difficult, especially on the Fuzz Expert System report which was much more scientific.

While writing the report, it became easier to break down each lab and understand each component. It also allowed me to appreciate each component and I understood why it was added into the report.

Initially I was confused on how the report was supposed to look. I knew that this assignment was supposed to include annotations of a lab. However, I initially thought that the assignment was simply to submit an annotated lab report.