Laboratory Notebook

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1 Cool Words

Anatomy - when you want to present sth. in detail.
e.g. The anatomy of a reinforcement learning algorithm (is shown in Fig. x)

Bridges - when you develop sth. that units the advantages of two different domains.
e.g. This work bridges the gap between high-dimensional sensory inputs and actions.

Bottleneck - when you want to state a problem that is quite challenging.
e.g. We present a solution for the bottleneck problem of network.

Classical – when you want to replace the word "traditional/usual" or highlight your innovation.
e.g. The classical approach is to use a simplified formula introduced by xxx.

Fashion - when you want to do sth. in a form, or replace the word "way".
e.g. The goal of the agent is to select actions in a fashion that maximizes cumulative future reward.

Sandwich - when you want to describe a structure that consist of sth. between two layers.
e.g. A multi-mode fiber (MMF) is sandwiched between two single-mode fibers (SMSs).

Shepherd - when you want to thank sb. for guidance in acknowledgement
e.g. We wish to thank our shepherd Prof. xxx and the anonymous reviewers.

Value - when you want to highlight sth. (*noun.* → *verb.*)
e.g. Modern society values teamwork.

2 Useful Expressions in Academic Writing

Experiment Design

This experimental design was employed because ...

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In the course of the experiment, ... played an important role.

The experiments were performed with ...

This was experimentally investigated by ...

Methods were based on previous experiments ...

This proceeds in two stages: ...

After a series of experiments it was found that ...

This was designed to acquire approximately ...

These were designed in such a way that ...

This experimental design was employed because ...

This was specifically designed for ...

This was designed to acquire approximately ...

Data Acquisition

There were ... participants in this sample.

Participants first provided informed consent about ...

The data are less clear-cut than ...

Data were collected and maintained by ...

The application employs data obtained from ...

The analyzed data included: ...

The procedures of handling the data followed the suggestions of ...

Subsequently, ... were then used to elicit further data.

The experimental data on ... is very scarce.

The data in this work consists of ...

Survey data were collected from ...

This study used different data collection methods such as ...

The quality can be enhanced by providing additional data for…

Such data are prone to …

The data was divided into …

Participants in the first data collection were …

The sample was heterogeneous with respect to …

The sample size in this study was not considered large enough for…

The sample of respondents included …

The researchers pooled samples to …

The sample strategy was the same as for…

Data Analysis

However, there are trends in our data to suggest that …

The trend values were then subjected to …

This showed a judgement error of …

To investigate this statistically, we calculated …

A … test was used to determine the significance of data

Data also revealed a significant …

Data were analyzed and correlated with …

The data are presented in Table …

However, according to our data …

The data is analyzed from different points of view such as …

The data reveals significant differences in …

Thus, the data supports the premise that …

Results provides a good fit to the data …

The evaluation of the data is shown in …

Missing values were replaced using …

This analysis was confined to …

The evaluation of the data presented in this work leads to …

Statistical Test

Statistical analyses was performed by using the ...applying a significance level of ...

The results were statistically significant when compared using ...

This was normally distributed throughout the study population.

This distribution resulted in ...

Significant differences in the ... remained.

This was the only parameter that had a statistically significant correlation with ...

This had a statistically significant impact on ...

The correlation between ... and ... is positive and statistically significant at ...

As shown in Table ... are statistically significant at all levels.

This revealed no statistical differences on ...

The test for ... found no significant differences.

All differences in performance were statistically significant in ...

The method achieves a statistically significant improvement compared to ...

In order to obtain statistically representative ... it is required to ...

Descriptive statistics were calculated for all variables used in the study using ...

The significance testing was based on ...

All statistical analyses were performed using ...

Assumption

Such a potentially unrealistic assumption arises from the fact that ...

Based on these assumptions, hypotheses were developed: ...

Based on these assumptions, ... have been treated as ...

This is based on assumptions that ...

These assumptions are generally accepted these days...

The fundamental assumptions of the models are: ...

This assumption is supported by the fact that ...

Under certain assumptions, ... can be construed as ...

These assumptions result in ...

This assumption might be addressed in future studies by …

This compilation of research assumptions should result in …

These assumptions have been disproved by …

According to … assumption, the study reports faithfully …

Experiment Results

For the current work, it is sufficient to point out that …

This was sufficient to …

This is sufficiently generic to be adapted to other …

This is generally sufficient to produce good results.

Still, results might be sufficient, especially in …

This was not possible due to insufficient observations.

After a series of experiments …was considered as sufficient.

It has been proven that … must be sufficient to …

This was not sensitive enough to …

This study cannot be considered large enough for …

This is simpler and usually sufficient to …

It turns out that it is sufficiently accurate for …

There is in fact sufficient information present in …

This is considered sufficiently unique for …