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Bachelor Thesis Bioinformatics

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Abstract

Write here your abstract.

Acknowledgements

Write here your acknowledgements.

Contents

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List of Abbreviations

BLAST	Basic Local Alignment Search Tool
...	...

Chapter 1

Introduction

A good introduction is of utmost importance.

At the end of the introduction follows a text similar to the following:

The paper is structured as follows: The basics of ... are developed in chapter 1. ... A discussion and a brief outlook in the chapter 4 conclude this work.

Before we turn to the evaluation and assessment of the primary data obtained, we would first like to repeat some basic concepts of descriptive statistics.

1.1 Random Samples

In principle, with a sample of RNA-seq data [BHW+10] we are dealing with a *sample* from a *population*. We now generally denote the observed data of size n with $X = \{x_1, x_2, \ldots, x_n\}$. This data should be described with statistical parameters. From these, we want to infer the underlying distribution in the population as reliably as possible. For this purpose, we use the **location** and **variance parameters**. First, however, we turn to the frequency and cumulative frequency distributions, which provide an impression of the distribution of X both graphically and numerically. For this purpose, we consider discrete distributions.

Given a sample $(X_1, X_2, \ldots, X_n)$. A function $Z_n = Z(X_1, \ldots, X_n)$ is called a *sampling function*. It is itself a random function.

1.1.1 Frequencies and Histograms

In X the value x_i occurs exactly n_i times, $i = 1, 2, \ldots m$. Then $\sum_i n_i = n$. The quotient n_i/n is the *relative frequency* for the occurrence of the event "$X = x_i$". The set of relative frequencies $\{n_1/n, n_2/n, \ldots, n_m/n\}$ is *frequency*

distribution of X. Furthermore, the set $\{s_1, \ldots, s_m\}$ with $s_i = \sum_{k=1}^{i} n_k/n$ is the *total frequency distribution* of X.

For the graphical representation of the frequency distribution, the *histogram* (see Fig. XX) is selected. for the cumulative frequency distribution, the *staircase function*.

1.1.2 Important Distributions

The Normal Distribution

Chapter 2

Material and Methods

In this chapter ...

2.1 Title of section

BlaBlaBla ...

2.1.1 Title of subsection

BlaBlaBla ...

To include a pdf file as a figure use the the following LaTeX-Code:

```
\begin{figure}[htb]
     \centerline{\includegraphics{figures/chordal.pdf}}
  \caption{Chordal Graphs}
  \label{chordal}
\end{figure}
```

Figures and tables should only appear at the top or bottom of a page.

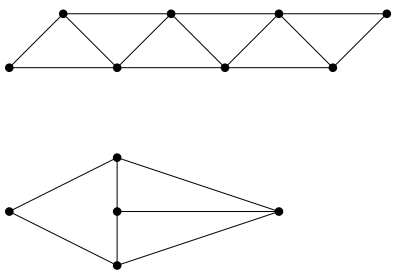

Figure 2.1: Chordal Graphs

Table 2.1: Example table with a long legend so that you can see that the line spacing has been reduced in the legend. The font should also be slightly smaller. This makes the whole environment look more compact.

Column 1	Column 2	Column 3	Column 4
xxx1111	xxxxxxx2222222	xxxxxx333333	xxxxxxxxxx444444
...	...	...	...

Figure 2.1 shows a chordal graph.

Tables are generated for example as follows. Note that the caption for tables is above the table, while for figures below the figure. An example is shown in Table 2.1.

A bullet list is generated as follows:

- ...
- ...

An enumeration as follows:

1. ...
2. ...

Emphases should be printed in *italics*, **bold font** is also possible.

Chapter 3

Results

Chapter 4

Discussion and Outlook

Take your time for writing the discussion, it is a very important chapter of your thesis.

At least 4-5 pages.

Outlook can become an extra chapter.

Bibliography

[BHW+10] F. Battke, A. Herbig, A. Wentzel, Ø. Jakobsen, M. Bonin, D. Hodgson, W. Wohlleben, T. Ellingsen, SysMO Stream Consortium, and K. Nieselt. A Technical Platform for Generating Reproducible Expression Data from Streptomyces coelicolor Batch Cultivations. In Hamid Arabnia, editor, *Software Tools and Algorithms for Biological Systems*. Springer, 2010.

Selbständigkeitserklärung

Hiermit versichere ich, dass ich die vorliegende Bachelorarbeit selbständig und nur mit den angegebenen Hilfsmitteln angefertigt habe und dass alle Stellen, die dem Wortlaut oder dem Sinne nach anderen Werken entnommen sind, durch Angaben von Quellen als Entlehnung kenntlich gemacht worden sind. Diese Bachelorarbeit wurde in gleicher oder ähnlicher Form in keinem anderen Studiengang als Prüfungsleistung vorgelegt.

Ort, Datum Unterschrift