

# Proseminar *Algorithms and Data Structures*

TOPIC

AUTHOR(S)

Supervisor: SUPERVISOR

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## 1 Introduction

Begin your paper with an introduction to your topic. Do not forget references such as [1].

### 1.1 Hello

bye.

## 2 Preliminaries

Introduces terms used in your topic by definitions. Furthermore, it can introduce theorems on which parts of your topic base. Hint: Use paragraphs to structure your text. This is the first paragraph.

And this is the second paragraph. By the way: Do not use abbreviations as don't, it's, or can't. In Figure 1 you can see an example of a picture embedded in a figure. The picture is created using the TikZLibrary (cf. TikZ-Manual). In Table 1 you can see an example for a table.

**Definition 2.1 (Name of the term)** *This is how you define a term.*

**Theorem 2.1 (Name of the theorem)** *This is how you write a theorem. Do not forget to prove the theorem.*

**Proof 2.1** *Here you write the proof of the theorem.*

In the next lines you can see some examples formulas and other constructs, which are useful in the math mode. A very useful webpage to find symbols and the packages to include is Detexify<sup>2</sup>.  $\Sigma, \sigma, \dots, \varphi, \xi$  You can use the math mode in the text, e.g.  $1 \neq 0$ , or write it in a whole line:

$$\begin{vmatrix} a_{1,1} & \dots & a_{1,n} \\ & \ddots & \\ a_{n,1} & \dots & a_{n,n} \end{vmatrix} = \begin{cases} \sum_{\sigma \in S_n} \left( \text{sgn}(\sigma) \prod_{i=1}^n a_{i,\sigma(i)} \right) & , \text{ if } True \\ \frac{42}{1} & , \text{ otherwise} \end{cases}$$



Figure 1: A digraph on the left and a directed tree on the right.

Table 1: This a a table.

	align left	centered	align right
row 1	box 1.1	box 1.2	box 1.3
row 2	box 2.1		box 2.2
row 2	box 2		

### 3 Topic

This section concerns the main topic. In the following you can see a small illustration of how to use itemizings and enumerations.

- Point 1.

- Point 2.

1. Point 1.

2. Point 2.

I) Point 1.

II) Point 2.

1. Point 1.

2. Point 2.

**Term one:** Description of term one.

**Term two:** Description of term two.

In Algorithm 1 you can see how we define an algorithm.

**Data:** this text

**Result:** how to write algorithm with L<sup>A</sup>T<sub>E</sub>X2e

initialization;

**while** *not at end of this document* **do**

    read current;

**if** *understand* **then**

        go to next section;

        current section becomes this one;

**else**

        go back to the beginning of current section;

**end**

**end**

**Algorithm 1:** How to write algorithms

### 3.1 Example

Give an example to illustrate the idea of your topic. Import images in the following way. Store the images in a separate folder as precasted in our template.



Figure 2: Proseminar supervisor's pet.

## 4 Conclusion

Give a conclusion on your topic. Give a few sentences to summarize the topic. If possible, point out the quality of the result and give a small prospect of subsequent works.

## References

- [1] C. Baier and J.-P. Katoen. *Principles of Model Checking*. The MIT Press, 2008.