

# A DESCRIPTIVE TITLE, NOT TOO GENERAL, NOT TOO LONG

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## ABSTRACT

Describe in concise words what you do, why you do it (not necessarily in this order), and the main result. The abstract has to be self-contained and readable for a person in the general area. You should write the abstract last.

## 1. INTRODUCTION

Do not start the introduction with the abstract or a slightly modified version.

### 1.1. Motivation

Start with the general setup of your paper. Where does the problem you address come from and what is the motivation. The motivation is very important.

### 1.2. Previous Work and State-of-the-Art

Describe related work relevant to this paper. Make clear what was done and what was not done.

### 1.3. What I Am Going to Do

Explain what you do, in a readable way, how you do it, and the main results you obtained. For a real paper, you would also make very clear here what is novel about your contribution. Also, you can reiterate why your work is relevant.

### 1.4. Organization of the Paper

Give a one paragraph overview of the paper, like: In Section 2 we provide the background on the discrete Fourier transform and its most important fast algorithms including their detailed cost analysis. In ...

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The author thanks Jelena Kovacevic. This paper is a modified version of the template she used in her class.

## 1.5. Markus' Comments

- You do not have to follow the exact subsection titles in this section or the others. It is just to help you get started. Alternatively, and what I usually do to save space, is to use paragraph titles instead of subsections, as in  
**Organization of the paper.** Blabla.
- It is generally a good idea to break sections into smaller units for readability and since it helps you to structure the story.
- Also, the following section titles should be adapted to more precisely reflect what you do.
- It is helpful to start each of the following sections with a very short summary of what the reader can expect in the section. Nothing more awkward as when the story starts and one does not know what the direction is or the goal.
- Make sure you define each acronym you use, no matter how convinced you are the reader knows it.
- Always spell-check before you submit (to me in this case).
- Be picky. When writing a paper you should always strive for very high quality. Many people may read it and the quality makes a big difference.
- Books helping you to write better: [1] and [2].
- Conversion to pdf (latex users only):  
dvips ... -Ppdf -G0 ....

## 2. NECESSARY BACKGROUND

Here you should give a short, self-contained summary of necessary background information. For example, assume you present an implementation of FFT algorithms. You could organize into DFT definition, FFTs considered, and cost analysis.

## 2.1. Discrete Fourier Transform

## 2.2. Fast Fourier Transforms

## 2.3. Cost Analysis

**Note: You have to:**

- Explain the algorithms you consider
- Do a cost analysis as precise as possible/meaningful. If it is only an asymptotic analysis, call it runtime analysis.

## 3. YOUR PROPOSED METHOD

Here you explain what you did, again first starting with a brief overview. Structure it as suitable.

**Note: You have to:**

- Explain all optimizations you performed

## 4. EXPERIMENTAL RESULTS

Here you evaluate your work using experiments (most likely runtime results). You start again with a very short summary, and then you give the experimental setup. At least: computer, architectural parameters, compiler, compiler flags, for benchmarks against other software: name and version number.

**Note: You have to:**

- Follow the guide to benchmarking, in particular
- very readable, attractive plots (1 column, not 2 column plots), proper font size
- every plot answers a question, which you pose and extract the answer from the plot in its discussion

## 5. CONCLUSIONS

Here you need to summarize what you did and why this is important. DO NOT TAKE THE ABSTRACT and put it in the past tense. Instead, try to highlight important results and their (potential) impact on your problem. Say something about what you could do next and what is on your wish list of improvements to your present method.

## 6. REFERENCES

- [1] N.J. Higham, *Handbook of Writing for Mathematical Sciences*, SIAM, 1998.
- [2] W. Strunk Jr. and E.B. White, *Elements of Style*, Longman, 4th edition, 2000.