

# Example of Report

## Computer Exercise 0

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26/09/2013

### Abstract

This document is an example to show you how to write an *Image and Signal Processing* computer exercise report. It will help you write your own report as you will only have to take the original `example.tex` file, save it with the name of your report (e.g. `ce01.tex`) and modify the content to obtain your report in the right format.

You should hand in your report **before the next computer exercise**, giving you an average of 2 weeks to complete it.

Your report should be *at most* 8 pages long and written with **this** template. The name of the sections should be the same. Subsections are left to your judgment.

## 1 Introduction

The introduction presents the computer exercise goal and the generic subject (for example signal statistics, etc.). Some lecture notions about the subject may be recalled here. *Please do **not** copy/past the computer exercise subject (the one you are given as a pdf or a html) here (nor in the other parts).*

The questions in the subjects are here to help you. Their answers should be found in the paper but within the following subsections and sections. No mention of the question itself is needed.

In any sections, you may also use some useful L<sup>A</sup>T<sub>E</sub>X commands:  
A list for example uses the command `itemize`

- a first item
- a second item
- a third item
- etc.

You may also want numbers so you can use the L<sup>A</sup>T<sub>E</sub>X command `enumerate`:

1. a first item
2. a second item
3. a third item

4. etc.

You can also emphasize text, by

- `using typewriter text`
- *emphasized text*
- **bold text**
- *roman text*
- *typewriter text*
- *san serif text*
- `SMALL CAPS TEXT`

## 2 Material & Methods

In this section, you will summarize all the algorithms and methods you saw during the several parts of the computer exercise. For example, for the first exercise, you will introduce here *mean* and *standard deviation*, of a signal as well as *histogram* or *random signal generation*.

You may use L<sup>A</sup>T<sub>E</sub>X mathematical formulas:

$$\left(\frac{a^2 + b^2}{c^3}\right) = 1 \quad \text{if } c \neq 0 \text{ and if } a > 0. \quad (1)$$

You may also, if you find it useful, create a subsection for each used method-/algorithm.

### 2.1 Algorithm Example

For each algorithm (except if it makes sense to group them all), you may describe them, their use, how do they work, and also the input signals/images as well as their implementation.

#### 2.1.1 Description

This is what the algorithm is exactly about, what it is used for, and how it works.

#### 2.1.2 implementation

If your algorithm led to implementation, you may display its code here with the L<sup>A</sup>T<sub>E</sub>X command `lstlisting` as for example:

This algorithm has been implemented into the file `GeneralSignal.java` with the following code:

```

1  /**
2   * Save the current signal in the file named filename.
3   * @param filename name of the file where to store the signal.
4   */
5   public void save(String filename) {
6       int nbSamples = this.getNbSamples();
7       String fileContent = "% Signal from Computer Exercise\n";
8       fileContent += "#" + nbSamples + "\n";
9       fileContent += "\n";
10      for (int i = 0; i < nbSamples; i++) {
11          fileContent += data.getX(i) + "\t\t" + data.getY(i) + "\n";
12      }
13      fileContent += "\n";
14
15      try {
16          BufferedWriter out = new BufferedWriter(new FileWriter(filename));
17          out.write(fileContent);
18          out.close();
19      } catch (IOException e) {
20          System.out.println("Could not save file " + filename + " sorry...\n");
21      }
22  }

```

## 3 Experiments

The results of all your experiments should be displayed and explained in this section.

### 3.1 Experimental Setup

Here you can explain all that needed to be set up for the experiment. For your computer exercises it may be mainly input signals or images. Maybe, they needed preprocessing or special storage or loading. It should be explained here.

#### 3.1.1 Input Signals/Images

If you create signals or images for inputs of your algorithms you should mention it in an *Input Signal* or *Input Image* sub-section. If you created them manually, you may display their code here with the `\lstlisting` command as for example:

```

1  % Example of signal
2  % Here, you can write comments
3  #6
4  -5.3 3.401877
5  -3.5 -1.056171
6  -2 2.830992
7  0 2.984400
8  1 4.3116474
9  3.5 -3.024486

```

You may also want to include images with the following `\figure` command. Figure 1 shows an example of Figure integrated within a document.

### 3.2 Results

In results subsection, you may present your results with figures, but also tables.

First cell	Second cell	Third cell
Cell L2C1	Cell L2C2	Cell L2C3
Merging 2 horizontal cells		Cell L3C3

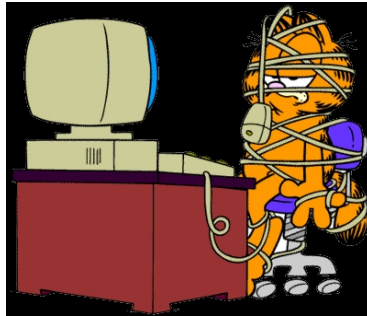


Figure 1: Caption describing the image and its purpose

### **3.3 Interpretation / Discussion**

You may here comment, interprets your results

## **4 Conclusion**

The conclusion may be short but should summarized what you learned thanks to this computer exercise.