

# Data Science Project Competition Latex Template

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## Abstract

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## Keywords

Keyword1, Keyword2, Keyword3 ...

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## Introduction

These latex files are intended to serve as a the template for the FRI Data Science Project Competition. If you find mistakes in the template or have problems using it, please consult Jure Demšar (jure.demsar@fri.uni-lj.si).

In the Introduction section you should write about the relevance of your work (what is the purpose of the project, what will we solve) and about related work (what solutions for the problem already exist). Where appropriate, reference scientific work conducted by other researchers. For example, the work done by Demšar et al. [1] is very important for our project. The abbreviation et al. is for et alia, which in latin means and others, we use this abbreviation when there are more than two authors of the work we are citing. If there are two authors (or if there is a single author) we just write down their surnames. For example, the work done by Demšar and Lebar Bajec [2] is also important for successful completion of our project.

## Methods

Use the Methods section to describe what you did and how you did it – in what way did you prepare the data, what algorithms did you use, how did you test various solutions ... Provide all the required details for a reproduction of your work.

Below are L<sup>A</sup>T<sub>E</sub>X examples of some common elements that you will probably need when writing your report (e.g. figures,

equations, lists, code examples ...).

## Equations

You can write equations inline, e.g.  $\cos \pi = -1$ ,  $E = m \cdot c^2$  and  $\alpha$ , or you can include them as separate objects. The Bayes's rule is stated mathematically as:

$$P(A|B) = \frac{P(B|A)P(A)}{P(B)}, \quad (1)$$

where  $A$  and  $B$  are some events. You can also reference it – the equation 1 describes the Bayes's rule.

## Lists

We can insert numbered and bullet lists:

1. First item in the list.
2. Second item in the list.
3. Third item in the list.

- First item in the list.
- Second item in the list.
- Third item in the list.

We can use the description environment to define or describe key terms and phrases.

**Word** What is a word?.

**Concept** What is a concept?

**Idea** What is an idea?

### Random text

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### Figures

You can insert figures that span over the whole page, or over just a single column. The first one, Figure 1, is an example of a figure that spans only across one of the two columns in the report.

On the other hand, Figure 2 is an example of a figure that spans across the whole page (across both columns) of the report.

### Tables

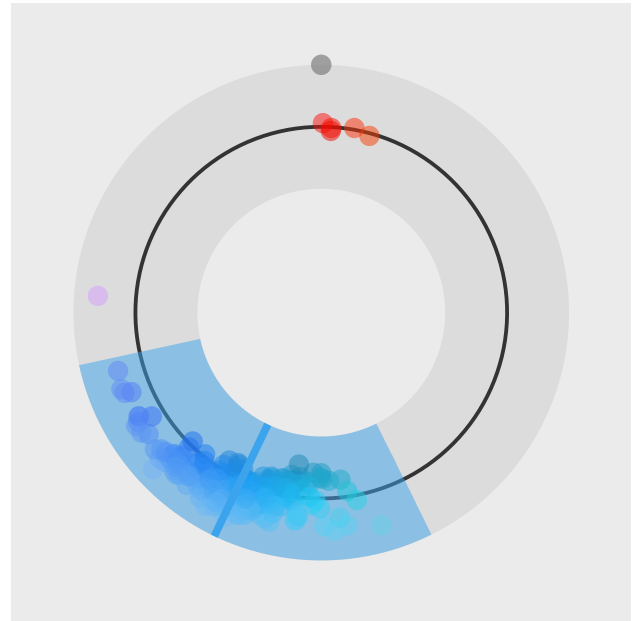
Use the table environment to insert tables.

**Table 1.** Table of grades.

Name		
First name	Last Name	Grade
John	Doe	7.5
Jane	Doe	10
Mike	Smith	8

### Code examples

You can also insert short code examples. You can specify them manually, or insert a whole file with code. Please avoid inserting long code snippets, advisors will have access to your repositories and can take a look at your code there. If



**Figure 1.** A random visualization. This is an example of a figure that spans only across one of the two columns.

necessary, you can use this technique to insert code (or pseudo code) of short algorithms that are crucial for the understanding of the manuscript.

**Listing 1.** Insert code directly from a file.

```
import os
import time
import random

fruits = ["apple", "banana", "cherry"]
for x in fruits:
    print(x)
```

**Listing 2.** Write the code you want to insert.

```
import (dplyr)
import (ggplot)

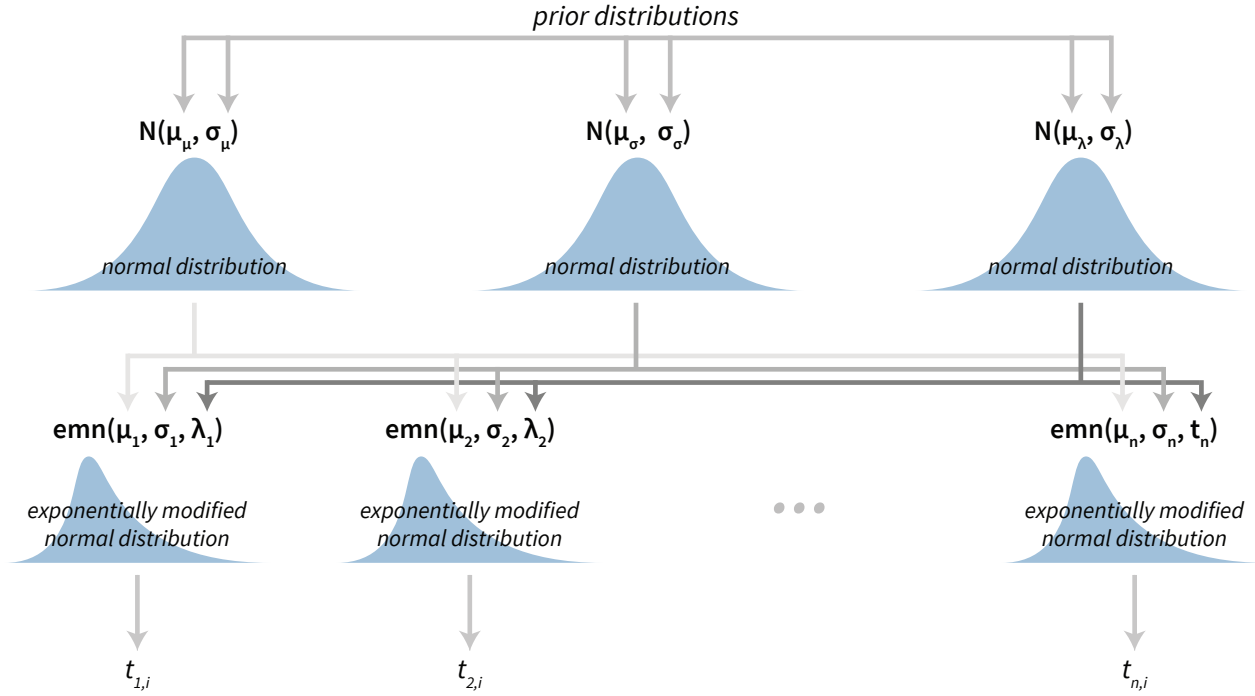
ggplot(diamonds,
       aes(x=carat, y=price, color=cut)) +
  geom_point() +
  geom_smooth()
```

## Results

Use the results section to present the final results of your work. Present the results in a objective and scientific fashion. Use visualisations to convey your results in a clear and efficient manner. When comparing results between various techniques use appropriate statistical methodology.

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**Figure 2. Visualization of a Bayesian hierarchical model.** This is an example of a figure that spans the whole width of the report.

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## Discussion

Use the Discussion section to objectively evaluate your work, do not just put praise on everything you did, be critical and exposes flaws and weaknesses of your solution. You can also explain what you would do differently if you would be able to start again and what upgrades could be done on the project in the future.

## Acknowledgments

Here you can thank other persons (advisors, colleagues ...) that contributed to the successful completion of your project.

## References

- [1] Jure Demšar, Erik Štrumbelj, and Iztok Lebar Bajec. A Balanced Mixture of Antagonistic Pressures Promotes the Evolution of Parallel Movement. *Scientific Reports*, 6, 2016.
- [2] Jure Demšar and Iztok Lebar Bajec. Evolution of Collective Behaviour in an Artificial World Using Linguistic Fuzzy Rule-Based Systems. *PLoS ONE*, 12(1):1–20, 2017.