



Linear Discriminant Analisys (LDA)

Seminário de Estatística

Master's Degree in Computational Modeling

Lorran de Araújo Durães Soares

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This template is inspired on the adaptation for [Politecnico di Torino presentations](#), developed by Mattia Ippoliti and Andrea Gasparini, which, in turn, is based on [SINTEF Presentation](#) from [Federico Zenith](#) and its derivation [Beamer-LaTeX-Themes](#) from Liu Qilong and Andrea Gasparini.

In the following you find a brief introduction on how to use [LaTeX](#) and the beamer package to prepare slides, based on the one written by [Federico Zenith](#) for [SINTEF Presentation](#)



Table of Contents

1 Introduction

- ▶ Introduction
- ▶ Personalization
- ▶ Summary



Beamer LNCC slides

1 Introduction

- We assume you can use \LaTeX ; if you cannot, [you can learn it here](#)
- Beamer is one of the most popular and powerful document classes for presentations in \LaTeX
- Beamer has also a detailed [user manual](#)
- Here we will present only the most basic features to get you up to speed



Beamer vs PowerPoint

1 Introduction

Compared to PowerPoint, using \LaTeX is better because:

- It is not What-You-See-Is-What-You-Get, but What-You-Mean-Is-What-You-Get:
you write the content, the computer does the typesetting
- Produces a pdf: no problems with fonts, formulas, program versions
- Easier to keep consistent style, fonts, highlighting, etc.
- Math typesetting in \TeX is the best:

$$i\hbar \frac{\partial}{\partial t} \Psi(\mathbf{r}, t) = -\frac{\hbar^2}{2m} \nabla^2 \Psi(\mathbf{r}, t) + V(\mathbf{r}) \Psi(\mathbf{r}, t)$$



Getting Started

Selecting the LNCC Theme

To start working with LNCC beamer, start a \LaTeX document with the preamble:

Minimum LNCC Beamer Document

```
\documentclass{beamer}  
\usepackage{LNCC}  
\begin{document}  
\begin{frame}{Hello, world!}  
\end{frame}  
\end{document}
```

* If, the LNCC theme is not in the same directory as the .tex file, you should use the full path to the package (e.g. `\usepackage{./assets/style/beamerthemeLNCC}`).



Title page

1 Introduction

To set a typical title page, you call some commands in the preamble:

The Commands for the Title Page

```
\title{Sample Title}  
\subtitle{Sample subtitle}  
\author{First Author, Second Author}  
\date{\today} % Can also be (ab)used for conference name &c.
```

You can then write out the title page with `\maketitle`.

To set a **background image** use the `\titlebackground` command before `\maketitle`; its only argument is the name (or path) of a graphic file.

If you use the **starred version** `\titlebackground*`, the image will be clipped to a split view on the right side of the title slide.



Writing a Simple Slide

It's really easy!

- A typical slide has bulleted lists



Writing a Simple Slide

It's really easy!

- A typical slide has bulleted lists
- These can be uncovered in sequence



Writing a Simple Slide

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Code for a Page with an Itemised List

```
\begin{frame}{Writing a Simple Slide}
\framesubtitle{It's really easy!}
\begin{itemize}[<+>]
\item A typical slide has bulleted lists
\item These can be uncovered in sequence
\end{itemize}\end{frame}
```



Table of Contents

2 Personalization

- ▶ Introduction
- ▶ Personalization
- ▶ Summary



Changing Slide Style

2 Personalization

- You can select the white or `LNCCmainblue` **slide style in the preamble** with `\themecolor{white}` (default) or `\themecolor{main}`
 - You should *not* change these within the document: Beamer does not like it
 - If you *really* must, you may have to add `\usebeamercolor[fg]{normal text}` in the slide
- You can change the **footline colour** with `\footlinecolor{color}`
 - Place the command *before* a new frame
 - There are four “official” colors: LNCCmainblue, LNCCyellow, LNCCgreen, LNCCdarkgreen
 - Default is no footline; you can restore it with `\footlinecolor{}`
 - Others may work, but no guarantees!
 - Should *not* be used with the LNCCmainblue theme!



Blocks

2 Personalization

Standard Blocks

These have a color coordinated with the footline (and grey in the blue theme)

```
\begin{block}{title}  
content...  
\end{block}
```

Colour Blocks

Similar to the ones on the left, but you pick the colour. Text will be white by default, but you may set it with an optional argument.

```
\begin{colorblock}[black]{LNCClightgreen}{title}  
content...  
\end{colorblock}
```

The “official” colours of colour blocks are:  LNCCpurple,  LNCCmainblue,  LNCCdarkgreen, and  LNCCyellow.



Using Colours

2 Personalization

- You can use colours with the `\textcolor{<color name>}{text}` command
- The colours are defined in the LNCCcolor package:
 - Primary colours:  LNCCmainblue and its sidekick  LNCCgrey
 - Three shades of green:  LNCClightgreen,  LNCCgreen,
 LNCCdarkgreen
 - Additional colours:  LNCCyellow,  LNCCorange,  LNCCpurple
 - These may be shaded—see the LNCCcolor documentation or the [SINTEF profile manual](#)
- Do not abuse colours: `\emph{}` is usually enough
- Use `\alert{}` to bring the focus somewhere



Using Colours

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- Do not abuse colours: `\emph{}` is usually enough
- Use `\alert{}` to bring the focus somewhere
- If you highlight too much, you don't highlight at all!



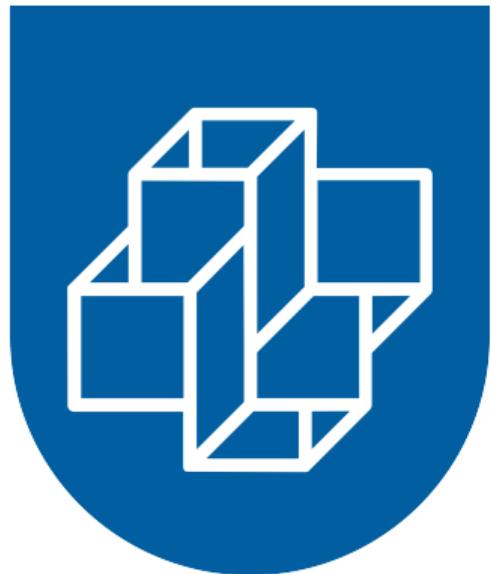
Adding images

2 Personalization

Adding images works like in normal L^AT_EX:

Code for Adding Images

```
\usepackage{graphicx}  
% ...  
\includegraphics[width=\textwidth]  
{assets/img/logo_RGB}
```





Splitting in Columns

2 Personalization

Splitting the page is easy and common; typically, one side has a picture and the other text:

This is the first column

And this the second

Column Code

```
\begin{columns}
    \begin{column}{0.6\textwidth}
        This is the first column
    \end{column}
    \begin{column}{0.3\textwidth}
        And this the second
    \end{column}
    % There could be more!
\end{columns}
```



Special Slides

2 Personalization

- Chapter slides
- Side-picture slides



Chapter slides

2 Personalization

- Similar to `frames`, but with a few more options
- Opened with `\begin{chapter}[<image>]{<color>}{<title>}`
- Image is optional, colour and title are mandatory
- There are seven “official” colours:  LNCCmainblue,  LNCCdarkgreen,  LNCCgreen,  LNCClightgreen,  LNCCorange,  LNCCyellow,  LNCCpurple.
 - Strangely enough, these are *more* than the official colours for the footline.
 - It may still be a nice touch to change the footline of following slides to the same color of a chapter slide. Your choice.
- Otherwise, chapter behaves just like `frame`.



Side-Picture Slides

2 Personalization

- Opened with
`\begin{sidepic}{<image>}{<title>}`
- Otherwise, `sidepic` works just like `frame`





Fonts

2 Personalization

- The paramount task of fonts is being readable
- There are good ones...
 - Use serif fonts only with high-definition projectors
 - Use sans-serif fonts otherwise (or if you simply prefer them)
- ... and not so good ones:
 - Never use monospace for normal text
 - Gothic, calligraphic or weird fonts should always be avoided



Look

2 Personalization

- To insert a final slide with the title and final thanks, use `\backmatter`.
 - The title also appears in footlines along with the author name, you can change this text with `\footlinepayoff`
 - You can remove the title from the final slide with `\backmatter[notitle]`
- The aspect ratio defaults to 16:9, and you should not change it to 4:3 for old projectors as it is inherently impossible to perfectly convert a 16:9 presentation to 4:3 one; spacings *will* break
 - The `aspectratio` argument to the `beamer` class is overridden by the LNCC theme
 - If you *really* know what you are doing, check the package code and look for the `geometry` class.



Table of Contents

3 Summary

- ▶ Introduction
- ▶ Personalization
- ▶ Summary



Good Luck!

3 Summary

- Enough for an introduction! You should know enough by now
- If you have corrections or suggestions, [send them to me!](#)



Linear Discriminant Analisys (LDA) *Thank*

*you for listening!
Any questions?*