

YOUR TITLE

— Project Report —

Advanced Bayesian Data Analysis

YOUR NAMES

January 21, 2025

TU Dortmund University

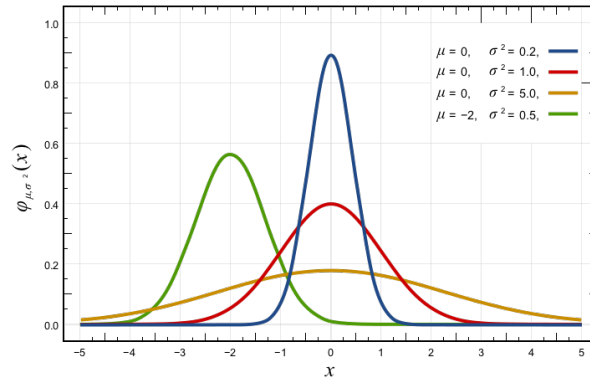


Figure 1: Probability density function for the Normal distribution. The red curve is the standard normal distribution. [By Inductiveload - self-made, Mathematica, Inkscape, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=3817954>]

Table 1: My caption.

Poisson	λ
Normal	μ and σ

1 Introduction

This is a template for the project report in the course Advanced Bayesian Data Analysis. Fill in your title and names for the title page and header and follow the general structure. You don't have to use multiple chapters or sections at all for this short report, but if you do, don't go further than subsections—Feynman et al. (1963) didn't need to...

Some examples on how to use L^AT_EX are shown below. If you want to reference something, you can do it as so: McElreath (2016).

1.1 Images

This is an example for how to insert images into your document. When talking about a figure, you should always point out which one you mean, i.e., “As you can see in Figure 1.”

1.2 Tables

A table has a caption *above* the table as in Table 1.

1.3 Formulas

This is a small example for how to include formulas into your document. $a^2 + b^2 = c^2$ will inline a formula, while

$$c \leq a + b$$

will give the formula its own line.

1.4 Formulas

You also might want to write out models:

$$\begin{aligned}L_i &\sim \text{Binomial}(n_i, p_i) \\ \text{logit}(p_i) &= \alpha_{\text{SUBJECT}[i]} + (\beta_P + \beta_{PC}C_i)P_i \\ \alpha_{\text{SUBJECT}} &\sim \text{Normal}(0, 10) \\ \beta_P &\sim \text{Normal}(0, 10) \\ \beta_{PC} &\sim \text{Normal}(0, 10)\end{aligned}$$

1.5 Source code

Of course, formatting source code is always nice.

```
m ← map(
  alist(
    height ~ dnorm(mu, sigma),
    mu ← a + b*weight,
    a ~ dnorm(0, 100),
    b ~ dnorm(0, 10),
    sigma ~ dunif(0, 50)
  ),
  data=d2)
```

1.6 Math fonts

Different math fonts are also available to you:

ABCDEabcde1234
ABCDEabcde1234
ABCDEabcde1234
ABCDEF − ∫ ∏ ∞ ∈ ∃ △
ℳℳℳℳ
ℳℳℳℳabcde1234
ABCDE∫∫∫∫

References

- Feynman, R., Leighton, R., & Sands, M. (1963). *The feynman lectures on physics* (1st ed.). Addison-Wesley.
- McElreath, R. (2016). *Statistical rethinking: A bayesian course with examples in r and stan*. CRC Press/Taylor & Francis Group.