LATEX-TEMPLATE

PROJECT TITLE

Project Description

TITLE

rédigé par
Allemand Instable

01 Mar 2024

Abstract

Lorem ipsum dolor sit amet. Ut expedita sunt est delectus quia ad nostrum delectus eum magni dolor. Eos nemo minima sit deleniti porro et necessitatibus minima ab quia necessitatibus in beatae autem et voluptas labore.
Lorem ipsum dolor sit amet. Ut expedita sunt est delectus quia ad nostrum delectus eum magni dolor. Eos nemo minima sit deleniti porro et necessitatibus minima ab quia necessitatibus in beatae autem et voluptas labore.

contribution

si jamais vous apercevez des fautes dans le polycopié, merci de rédiger une issue sur Github à l'adresse:

correctif

Latex-Template/issues

contact

mail DEV: redacted@gmail.com

Notation	Signification
Category A	
Category B	

Contents

List of Figures

List of Algorithms

Chapter 1

Chapter 1

Contents

1.1 section example

1.1.1 subsection example

Lorem ipsum dolor sit amet. Ut expedita sunt est delectus quia ad nostrum delectus eum magni dolor. Eos nemo minima sit deleniti porro et necessitatibus minima ab quia necessitatibus in beatae autem et voluptas labore.Lorem ipsum dolor sit amet. Ut expedita sunt est delectus quia ad nostrum delectus eum magni dolor. Eos nemo minima sit deleniti porro et necessitatibus minima ab quia necessitatibus in beatae autem et voluptas labore.

Chapter 2

Chapter 2

Contents

2.1

Chapter 3

Chapter 3

Contents

3.1

Chapter 4

Article

4.1 Introduction

4.1.1 Notation

4.2 Methodology

4.3 Theoretical properties

4.4 Simulations & numerical study

Appendix A

Some Appendix

Contents

A.1 with subsection

A.2 and another one

Appendix B

Code Examples

B.1 with comments

```r
    # --- install --- #
    install.packages(c("fda", "fda.usc"))
    # --- general packages --- #

    library(data.table)
    # --- FDA packages --- #

    library(fda)
    library(fda.usc)
```

B.2 Math in code bloc

```r
# |     date      | $X_1$ | $X_2$ | $\cdots$ | $X_p$ |
# | Jan 1st 12:00 | ⋮   | ⋮   |     | ⋮   |
data <- fread("data.csv")


# un individu = une ligne
# donc pour une série temporelle, il faut transposer les observations et avoir la
↪  suite des données disposées sur une ligne.
fdata_standard_index <- fda.usc::fdata(
    mdata = t(X),
    argvals = to_unit_interval(
    #               ↑
    # on doit ramener les dates dans l'intervalle [0,1]
        data[, .(date)]
    )
)
```

B.3 some generic code

```r
nb_points <- ncol(fdata)
nb_ts <- nrow(fdata)

fda_optim_basis <- fda.usc::optim.basis(
    fdataobj = select_representative_observations_for_mean_function_fdata(fdata_ts
    ↪  = fdata, is_iid = is_iid),
    type.CV = fda.usc::GCV.S,
    W = NULL,
    lambda = lambda_CV_look_list,
    numbasis = num_basis__seq,
    type.basis = "bspline",
    verbose = TRUE
)
```

another code block :

```r
fda_optimal_basis <- ...
fdata_obj_temp <- fda_optimal_basis[["fdata.est"]]
fdata_obj <- fda.usc::fdata2fd(fdata_obj_temp)
fpca_result <- fda::pca.fd(
    fdobj = fdata_obj,
    nharm = 3,
    # centrer les données
    centerfns = TRUE
)
```

B.4 inline block with math

Regardons désormais à quoi ressemble la sortie :

$$\texttt{fpca\_result\$scores} = \begin{array}{c} \\ \downarrow [X_i] \end{array} \begin{array}{c} \longrightarrow [\phi_k] \\ \begin{bmatrix} \ddots & \cdots & \vdots \\ \vdots & \xi_i^{[k]} = \langle X_i - \mu | \phi_k \rangle & \vdots \\ \cdots & \cdots & \ddots \end{bmatrix} \end{array}$$

Appendix C

Article's Appendix

C.1

C.2

Bibliography

(1) A. Monfort C. Gourieroux and A. Trognon. Pseudo maximum likelihood methods: Theory. The Econometric Society, 52(3), 1984. pages 681-700. DOI : https://doi.org/10.2307/1913471.