

The Clean Thesis Style

Ricardo Langner

August 26, 2015
Version: My First Draft

Clean Thesis Style University

Clean**Thesis**

Department of Clean Thesis Style

Institut for Clean Thesis Dev

Clean Thesis Group (CTG)

Documentation

The Clean Thesis Style

Ricardo Langner

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|--------------------|--|
| <i>1. Reviewer</i> | Jane Doe
Department of Clean Thesis Style
Clean Thesis Style University |
| <i>2. Reviewer</i> | John Doe
Department of Clean Thesis Style
Clean Thesis Style University |
| <i>Supervisors</i> | Jane Doe and John Smith |

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Department of Clean Thesis Style

Street address

Postal Code and City

Abstract

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Abstract (different language)

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Acknowledgement

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Introduction

“ You can’t do better design with a computer, but
you can speed up your work enormously.

— Wim Crouwel

(Graphic designer and typographer)

And after the second paragraph follows the third paragraph. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

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1.1 Postcards: My Address

Ricardo Langner

Alfred-Schrapel-Str. 7

01307 Dresden

Germany

1.2 Motivation and Problem Statement

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

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[Jür00; Jür95; Mie11a; KJUM11; App10a; App10b; App10c]

1.3 Results

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1.3.1 Some References

[@Fre10; @Mie11b]

1.4 Thesis Structure

Chapter ??

We derived a class of discount curve construction and extrapolation methods, based on a class of interest rate models called *exogenous short-rate models*. That means: constructing a static Yield Curve at a given date, by using some specific financial instruments with different maturities quoted at this date. Then, defining what are the discount rates beyond the longest maturity observed for these financial instruments. The extrapolated part of the curve is typically necessary for the pricing of long-term insurance liabilities. In the framework that we propose, Yield Curve forecasts can

be obtained by using a **functional principal components analysis** on the model parameters.

Chapter ??

We were interested in obtaining forecasts for multiple time series, by taking into account the potential nonlinear relationships between their observations. For this purpose, we used a specific type of regression model on an augmented dataset of lagged time series. Our model is inspired by dynamic regression models, with the response variable's lags included as predictors, and is known as **random vector functional link (RVFL) neural networks**. The RVFL neural networks have been successfully applied in the past, to solving regression and classification problems. The novelty of our approach is to apply an RVFL model to multivariate time series, under two separate regularization constraints on the regression parameters.

Chapter ??

The goal of ensemble learning is to combine two or more statistical/machine learning models - the base learners - into one, in order to obtain an ensemble model. The ensemble model is expected to have an improved out-of-sample error over the base models. We apply two popular ensemble learning methods to multiple time series forecasting: **bootstrap aggregating**, known as bagging and **stacked generalization**, known as stacking. The base learners that we use, are the RVFL introduced in the previous paragraph.

Chapter ??

Kernel regularized least squares (KRLS) learning methods are applied to Yield Curve forecasting. Two types of formulations of the forecasting problem are tested. One relying on a popular framework called Dynamic Nelson-Siegel, and another one, in which we apply the KRLS directly to the explain the spot rates (response variable) as a function of the observation dates and time to maturities (covariates).

Chapter 2

We present a **bayesian quasi-randomized vector functional link neural network model** (BQRVFL), with one hidden layer. It's a penalized regression model on an augmented data set, in which we assume that a prior multivariate gaussian distribution governs the regression parameters. The BQRVFL model is presented, along with the associated formulas for confidence interval around its predictions. It is then applied as a workhorse for **bayesian optimization** of machine learning cross-validation functions. The machine learning cross-validation functions that we consider are those associated to the selection of hyperparameters of RVFL and KRLS models.

Conclusion

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

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2.1 System Section 1

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2.2 System Section 2

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2.3 Future Work

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List of Figures

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Colophon

This thesis was typeset with \LaTeX 2_ε. It uses the *Clean Thesis* style developed by Ricardo Langner. The design of the *Clean Thesis* style is inspired by user guide documents from Apple Inc.

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Declaration

You can put your declaration here, to declare that you have completed your work solely and only with the help of the references you mentioned.

City, August 26, 2015

Ricardo Langner

