Artificial Neural Networks and Deep Learning
Homework 2

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1 Introduction

CHRISTIAN + MARCO TIME SERIES MARCO

Type of Text	Font Size	Style
paper title	15 pt	bold
author names	12 pt	bold
author affiliation	12 pt	
the word “Abstract”	12 pt	bold
section titles	12 pt	bold
document text	10 pt	
captions	10 pt	
abstract text	10 pt	
bibliography	10 pt	
footnotes	9 pt	

Table 1: Sizes and styles of fonts used.

2 Preprocessing

2.1 Normalization

2.2 Augmentation

2.3 Numpy

NICOLA

2.4 TSUNG/Librery

RAFFAELLO

2.5 Seasonal + Trend preprocess

Christian

2.6 Expanding Window size

2.7 Adding New Features

Christian

3 Vanilla Models

MARCO

4 Net Concatenations

4.1 LSTM + CNN

4.2 CNN + LSTM

5 Heterogeneus Layers

5.1 LSTM + CNN

5.2 CNN + LSTM

5.3 CNN + DENSE

5.4 ALTRI DI RAFFAELLO

6 Our best Model

Unexpectedly bla bla bla

7 Conclusion

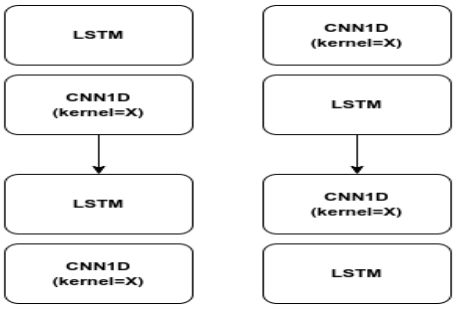

Figure 1: LSTM-CNN and CNN-LSTM model schematics

8 Adapt 2D models to 1D convolutions

8.1 InceptionNet

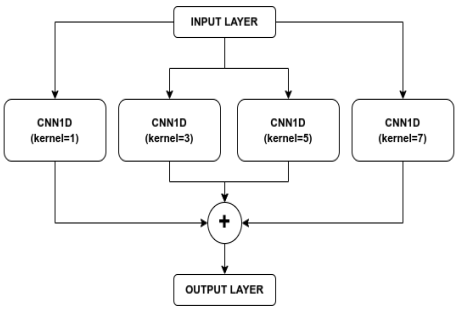

Figure 2: CNN1D Inception Like Net

8.2 Resnet

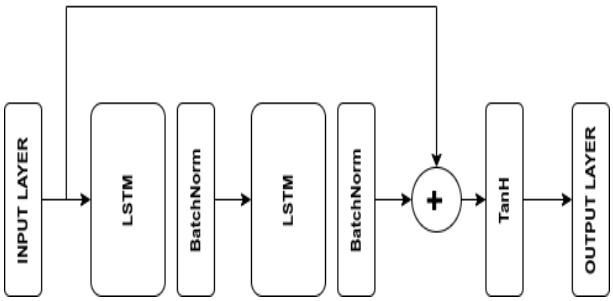

Figure 3: Resnet Like LSTM Net