

Artificial Neural Networks and Deep Learning

Homework 2

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1 Introduction

CHRISTIAN + MARCO TIME SERIES MARCO

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paper title	15 pt	bold
author names	12 pt	bold
author affiliation	12 pt	
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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

NICOLA + RAFFAELLO

2.3 Seasonal + Trend preprocess

Christian

2.4 Expanding Window size

2.5 Adding New Features

Christian

3 Vanilla Models

MARCO

4 Net Concatenations

4.1 LSTM + CNN

4.2 CNN + LSTM

5 Heterogeneous 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

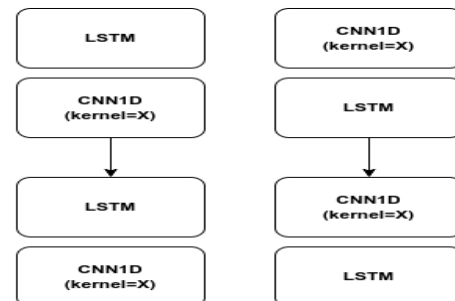


Figure 1: LSTM-CNN and CNN-LSTM model schematics

8 Adapt 2D models to 1D convolutions

8.1 InceptionNet

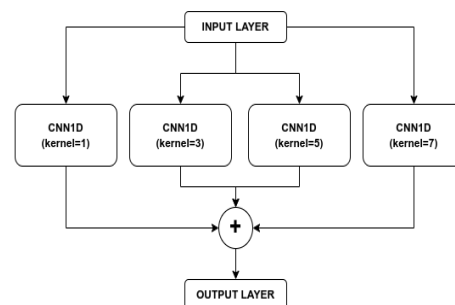


Figure 2: CNN1D Inception Like Net

8.2 Resnet

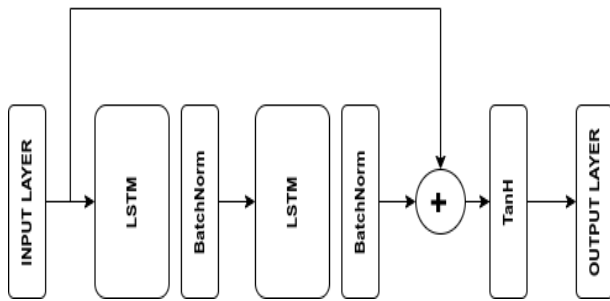


Figure 3: Resnet Like LSTM Net