

Week 11: Numeric & Time series Predictions

Week 11 Overview

Topics

1. Recurrent Neural Networks (RNN)
2. Long Short Term Memory (LSTM)

Weekly Learning Outcomes

At the end of the week, students should be able to meet these learning outcomes:

1. Understand Time Series Linear Model
2. Understand techniques for forecasting a Time Series
3. Explain how RNN and LSTM model Time Series


To Do

Useful links to additional materials on Long Short-Term Memory Networks (LSTM)

[Illustrated Guide to LSTM's and GRU's: A step-by-step explanation links](https://towardsdatascience.com/illustrated-guide-to-lstms-and-gru-s-a-step-by-step-explanation-44e9eb85bf21) (<https://towardsdatascience.com/illustrated-guide-to-lstms-and-gru-s-a-step-by-step-explanation-44e9eb85bf21>) (<https://towardsdatascience.com/illustrated-guide-to-lstms-and-gru-s-a-step-by-step-explanation-44e9eb85bf21>)

[A Gentle Introduction to Long Short-Term Memory Networks by the Experts \(https://machinelearningmastery.com/gentle-introduction-long-short-term-memory-networks-experts/\)](https://machinelearningmastery.com/gentle-introduction-long-short-term-memory-networks-experts/)

Lecture

Lecture slides: [Week 11 Methods for Numeric Prediction and Time Series Analysis 2024.pdf \(https://canvas.aut.ac.nz/courses/17273/files/5515541?wrap=1\)](https://canvas.aut.ac.nz/courses/17273/files/5515541?wrap=1). 
(https://canvas.aut.ac.nz/courses/17273/files/5515541/download?download_frd=1)

Lab 11



<https://canvas.aut.ac.nz/courses/17273/modules/items/853859>

Week 10: Numeric & Time series Predictions



Lab 10

<https://canvas.aut.ac.nz/courses/17273/modules/items/853862>

Week 11: Deep Learning for Classification



Lab 11