

# Contents

<b>1</b>	<b>1. Recurrent Neural Networks</b>	<b>2</b>
1.1	1.1 Why sequence models . . . . .	2
1.2	1.2 Notation . . . . .	2
1.3	1.3 Recurrent Neural Network Model . . . . .	2
1.4	1.4 Backpropagation through time . . . . .	2
1.5	1.5 Different type of RNNs . . . . .	2
1.6	1.6 Language model and sequence generation . . . . .	2
1.7	1.7 Sampling noval sequences . . . . .	2
1.8	1.8 Vanishing gradients with RNNs . . . . .	2
1.9	1.9 Gated Recurrent Unit(GRU) . . . . .	2
1.10	1.10 Long Short Term Memory(LSTM) . . . . .	2
1.11	1.11 Bidirectional RNN . . . . .	2
1.12	1.12 Deep RNNs . . . . .	2

contents

- 1. Recurrent Neural Networks
  - 1.1 Why sequence models
  - 1.2 Notation
  - 1.3 Recurrent Neural Network Model
  - 1.4 Backpropagation through time
  - 1.5 Different type of RNNs
  - 1.6 Language model and sequence generation
  - 1.7 Sampling noval sequences
  - 1.8 Vanishing gradients with RNNs
  - 1.9 Gated Recurrent Unit(GRU)
  - 1.10 Long Short Term Memory(LSTM)
  - 1.11 Bidirectional RNN
  - 1.12 Deep RNNs

# **1 1. Recurrent Neural Networks**

## **1.1 1.1 Why sequence models**

## **1.2 1.2 Notation**

## **1.3 1.3 Recurrent Neural Network Model**

## **1.4 1.4 Backpropagation through time**

## **1.5 1.5 Different type of RNNs**

## **1.6 1.6 Language model and sequence generation**

## **1.7 1.7 Sampling noval sequences**

## **1.8 1.8 Vanishing gradients with RNNs**

## **1.9 1.9 Gated Recurrent Unit(GRU)**

## **1.10 1.10 Long Short Term Memory(LSTM)**

## **1.11 1.11 Bidirectional RNN**

## **1.12 1.12 Deep RNNs**