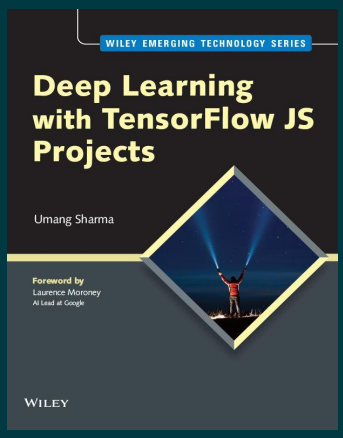
WILEY



Deep Learning with TensorFlow JS Projects

By Umang Sharma

Paperback 9789354642401 ₹999.00

Description

Deep Learning with TensorFlow JS Projects aims to teach Deep Learning application development with ease. This book is designed to teach both JS and Machine Learning expertly. Each chapter starts with a bit of theory on a particular Deep Learning concept and then goes on to build a full-fledged fun Web app using the same. Doing Deep Learning in production is critical for its success, and this book intends to teach that. This book can also be used to build a strong foundation of difficult DL concepts such as CNNs, RNNs, GANs, and much more.

About the Author

Umang Sharma

Umang Sharma is a Senior Data Scientist with years of experience building Deep Learning solutions in multiple areas of Computer Vision, Natural Language Processing, Reinforcement Learning

Table of Contents

Foreword

Preface

About the Authors

Chapter 1 Getting Started with TensorFlow JS and ML Web Apps

1.1 Introduction

1.2 Using TF.js in Your Web App

1.3 API Overview of TF.js and its Usage

1.4 Doing Deep Learning in JavaScript

1.5 Engines behind TF.js

1.6 Capabilities of TF.js

1.7 Visualizing Data in TF.js

1.8 ML Web App Architecture

Chapter 2 Creating a Web App to Perform Sentiment Analysis

2.1 Introduction

2.2 Technical Requirements

2.3 Project Overview

2.4 Sentiment Analysis: Problem and the Solution
2.5 Getting Started
2.6 Building the Sentimental Analysis Web App
2.7 Word Embeddings
2.8 Configuring and Training the Model
2.9 Completing the Train.js
2.10 Creating the UI of the Web Apps
2.11 Loading the Pre-Trained Models
2.12 Creating Index.js of the App
2.13 Binding the Code and Launching the Application
2.14 Training and Creating Visualizations
Chapter 3 Building a Self-Learning Web App to Perform Addition Using RNNs and GRU
3.1 Introduction
3.2 Recurrent Neural Networks: RNNs
3.3 Project Overview: The Addition Problem
3.4 Technical Requirements
3.5 Creating the Self Learning Addition Web App
3.6 Long Term Dependencies and their Solutions
3.7 Sequence to Sequence Encoder-Decoder Architectures
3.8 Building the Neural Net
3.9 Creating the Backend Engine of the App
Chapter 4 Creating the Web App for Text Generation Using LSTM
4.1 Introduction
4.2 Technical Requirements
4.3 Understanding the Text Generation Problem
4.4 Long Short-Term Memory Networks
4.5 Resolving Text Generation Problem Using LSTM
4.6 Project Overview
Chapter 5 Building Webcam-Based PacMan Game on Your Browser Using MobileNet
5.1 Introduction
5.2 Technical Requirements
5.3 The Need for Computationally Efficient CNNs
5.4 Introducing MobileNet Class of Architectures
5.5 Getting Started
5.6 Building the Webcam-Based PacMan Web App Using MobileNet
Chapter 6 Building Real-Time Pose and Body Parts Detector Using PoseNet
6.1 Introduction
6.2 Technical Requirements

6.3 Pose Estimation Problem
6.4 Atrous Convolutions
6.5 FRCNN Overview
6.6 The PoseNet
6.7 The Output of Google PoseNet
6.8 Getting Started with Pose Estimation Project
6.9 Building the Pose Estimation Web-App
6.10 Deploying PoseNet in Production
Chapter 7 Getting Invisible and Adding Cool Features to Images Using BodyPix
7.1 Introduction
7.2 Technical Requirements
7.3 Understanding Image Segmentation
7.4 The BodyPix Model and its Capabilities
7.5 Idea Behind BodyPix
7.6 Adding Effects to Pictures Using BodyPix
7.7 Getting Started
7.8 Building the BodyPix Demo Web-App
Chapter 8 Building a Synthetic Images Generator Using GANs
8.1 Introduction
8.2 Technical Requirements
8.3 Generative Modeling and Basics of Image Statistics
8.4 Generative Adversarial Networks
8.5 Auxiliary Classifier GANs (ACGANs)
8.6 Project Overview
8.7 Building a Web App to Generate Synthetic Images Using ACGANs
8.8 Visualizing the Training using TensorBoard
8.9 Tweaking the Hyper-Parameters
Chapter 9 Building an App to Encode, Decode, and Generate Images Using Variational Autoencoder
9.1 Introduction
9.2 Autoencoders
9.3 Variational Autoencoders (VAEs)
9.4 Project Overview
9.5 Getting Started
9.6 The MNIST Fashion Dataset
9.7 Building the VAE Web-App
Chapter 10 Building a Solution to Pole-Cart Problem Using Reinforcement Learning
10.1 Introduction
10.2 Technical Requirements

10.3 Introduction to Reinforcement Learning

10.4 Policy Gradient Method

10.5 The Pole-Cart Problem

10.6 Building the Cart Pole Web App

Summary

Multiple Choice Questions

Review Questions

Exercises

Index

To purchase this product, please visit:
https://www.wileyindia.com/deep-learning-with-tensorflow-js-projects.html

Scan to buy