Get Ready to Become AI Engineer

56 lessons

Python Programming Basics

46 lessons

Data Processing and AI/ML Models

72 lessons

Deep Learning with Keras, TF and PT

- **Introduction**
- Foundations of Artificial Neural Networks (ANNs)
- Learning Process in Neural Networks (Incl. Backpropagation)
- Hyperparameters in Neural Networks
- Architecture and Mechanics of Neural Networks
- Custom Models in Keras
- From Neural Networks to Deep Learning
- Training DNNs I-IV (part I)
- Training DNNs V-VII (part II)
- Keras Toolkit: Advanced Techniques
- Deep Learning with IMDB Reviews
- Time to Practice: Custom Models in Keras

- Computer Vision | Applications and Raster Images
- Computer Vision | Deep Learning
- Transfer Learning
- Computer Vision with the CelebA Dataset
- Time to Practice: Pre-trained Models
- TF | TensorFlow
- TensorFlow by Google
- Programming Basics and Operations in TensorFlow
- Building a Simple Neural Network with TensorFlow
- Advanced TensorFlow | Keras API, TensorBoard, and Graph Execution
- TF | Custom Training Loops
- Time to Practice: TF | TensorFlow
- PT | PyTorch
- PyTorch by Facebook
- OOP | Object-Oriented Programming
- OOP | Example Employee Class
- [OPTIONAL] More on OOP | Intermediate
- Iterators & Generators
- Practical Applications in PyTorch
- DataBox Class Project | OOP
- PT | Custom Models
- Time to Practice: PT | PyTorch OOP

Managing AI/ML Pipelines & Systems Deployment

47 lessons

Introduction

Welcome to the "Adventures in Neural Networks and Deep Learning" Unit!?

Dive deeper into the transformative world of neural networks and **`deep learning`** on your *Journey* to become AI Engineer. This module is designed to introduce you to more complex concepts and architectures of neural networks, as well as the practical skills needed to build, train, and deploy models using some of the most powerful tools in the industry: **`Keras`**, **`TensorFlow`**, and **`PyTorch`**. You

More about Neural Networks

Our adventure with the basics of neural networks has already started... Now, that you understand what they are, know their fundamental components like neurons, weights, biases, and activation functions, you are ready to discover various network architectures. Apart of feedforward, there are also convolutional, and recurrent networks that have many useful applications and everyone working with neural networks should know about.

Applications in `Computer Vision (CV)` and `Natural Language Processing (NLP)`

The journey continues as we apply our knowledge to real-world applications: – In computer vision, utilize `convolutional neural networks (CNNs)` for tasks like image classification and object detection. – In the realm of natural language processing, deploy `recurrent neural networks (RNNs)` and `long short-term memory networks (LSTMs)` for projects including sentiment analysis and machine translation.

Mastering Deep Learning Frameworks

Next, we'll delve into the world of Keras, TensorFlow, and PyTorch. Each framework offers unique features and capabilities, and you'll learn to navigate them through hands-on examples:

- With Keras, enhance your skills in building and training straightforward models.
- TensorFlow and PyTorch are more complex but give us more options, we will guide you through executing different deep learning models for more advanced experience.

In numerous job postings, you'll notice that some positions require proficiency in TensorFlow, while others prefer PyTorch. Additionally, most roles involve switching between frameworks based on specific project needs or client preferences. Therefore, having a foundational understanding of both libraries can be extremely beneficial for your future career opportunities.

Get ready to build, train, and deploy state-of-the-art models that redefine the boundaries of technology and creativity in data science!