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Sign up

Deep Learning Workshop with Tensorflow

1 day (7 hours)

Presentation

A one-day Deep Learning workshop designed for developers. No Python or Machine Learning skills are required for this workshop. Come with your curiosity and your desire to learn.

Over the course of a few hours, you'll code a deep neural network yourself to solve a defined supervised learning problem. You'll start by coding each function in Python and see for yourself how deep learning works under the hood. Then you'll refactor your code using TensorFlow, the world's most widely used machine learning library.

Machine Learning is an exciting and fast-growing subject. But for software developers, it's not always easy to find the time to embark on learning this field, especially when you're on the job. This workshop has been designed to introduce you to deep neural networks, and enable you to take your first steps in this field!

Deep Learning is one of the most popular techniques for Machine Learning, and one day is enough to give you a good grounding and enable you to better structure your learning project in the vast field of Machine Learning and Artificial Intelligence.

Over the course of a few hours, you'll code a deep neural network yourself to solve a defined supervised learning problem. You'll start by coding each function in Python and see for yourself how deep learning works under the hood. Then you'll refactor your code using Tensorflow, the world's most widely used machine learning library.

Most software developers make the mistake of specializing in the use of a tool, without knowing the how and why (don't be a tool user!). Our aim is not to teach you how to use a tool or technology, but rather to help you understand the logic behind it.

understand the logic behind it. An ML engineer needs to be able to implement with different libraries and not be dependent on one particular tool.

As with all our training courses, this one will feature the latest version of the tool, TensorFlow 2.4.

The Promise

By the end of this workshop, you'll know :

- Differentiate between forward and back propagation, gradient descent, error function, classification, regression and other basic concepts.
- Implement a deep neural network without any framework!
- Implement a neural network using Tensorflow.
- You'll have taken your first steps in Machine Learning and coded a functional artificial intelligence yourself, which you can show off to your friends.

Objectives

- Find out what Deep Learning is, what it's used for and how it's currently being used.
- Code a deep neural network from scratch in Python and understand in detail how it works under the hood.
- Take your first steps with TensorFlow, the world's most popular machine learning library! the world!

Target audience

- This introductory workshop is open to all developers interested in AI.

Prerequisites

- To attend this workshop, you need to bring your own laptop. No tools to install.
- Basic knowledge of software development in any language (PHP, JavaScript, C, C++, Java, Python, etc.).
- Know what a matrix is.
- Know how to derive a function and what it's used for.

An original teaching approach

A face-to-face, meetup-style workshop specially designed for developers of all levels.

- Maximum of 12 people per workshop.
- An innovative, step-by-step teaching method.

- After each step, knowledge assessment and round-table discussion to answer questions.
- Post-workshop training materials sent to you for further study and review.
- Access to your code after training.

Our training program: Deep Learning & TensorFlow hands-on workshop

9:00 - 10:00

What is artificial intelligence?

- Introduction to artificial intelligence, machine learning and deep learning.
- How (and why) to teach a machine to do something.

10:00 - 11:00

How deep learning is used today

- Discover real-life examples of how Deep Learning is being used.
- From autonomous cars to chatbots, from automatic cancer detection to finding lost people.

11:00 - 13:00

Introduction to basic concepts

- Regression and classification.
- Perceptron and neural networks.
- Forward propagation, backpropagation, error function and gradient descent.
- Hyper-parameters of a machine learning model.

13:00 - 14:00

Lunch and networking

- Self-service buffet included in the workshop price.

14:00 - 15:00

Introduction to Python and matrix calculus

- Basic operations in Python.
- Matrix manipulation in Python.

15:00 - 17:00

Workshop: Coding a deep neural network!

Coding without any framework from scratch:

1. A perceptron
2. Error functions, forward propagation, back propagation
3. A neural network
4. A deep neural network

Then, refactor the deep neural network using TensorFlow. 17:00 - 18:00

Final thoughts

- How can we take Machine Learning and artificial intelligence further?

Companies concerned

This training course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology, or to acquire specific business knowledge or modern methods.

Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the forthcoming course, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

Teaching methods

Practical training: 60% hands-on, 40% theory. Training material distributed in digital format to all participants.

Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

Certification

A certificate will be awarded to each trainee who has completed the entire course.

Training organization registered under number 11 75 54743 75. This registration does not constitute government approval.
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