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Sign up

Mojo training: The programming language for AI developers

3 days (21 hours)

Presentation

Our Mojo training course will introduce you to this new programming language that bridges the gap between production and research by combining Python's syntax and ecosystem with metaprogramming features.

During our course, you'll learn about the fundamentals of this programming language, such as [Multi-Level Intermediate Representation](#) (MLIR), an open source compiler infrastructure for creating domain-specific compilers.

With this course, you'll use the ease-of-use of Python with the performance of C to achieve unrivalled programmability of AI hardware and extensibility of AI models.

You'll learn the basic and advanced features of the Mojo language so you can integrate it effectively into your working environment.

As with all our previous training courses, this one will be presented with the very [latest](#) from Mojo.

Objectives

- Understand Mojo functions such as matrix multiplication, loop vectorization and Python package import.
- Mastering the basics of Mojo
- Know how to use external resources and improve code quality
- Mastering AI equipment
- Understand the software design process

Target audience

- Developers
- AI Engineers

Prerequisites

Basic programming skills.

Mojo Training Program

Introduction to Mojo

- Tool presentation
- Configuration
- Installation & Update
- Writing and executing code
- Functions and procedures: organizing your code
- Conditional commands and loops

Features

- Using low-level primitives
 - What is MLIR?
 - Set the `OurBooType`
 - Compiler constants
 - Avoid type conversion with `mlir_il`
 - MLIR features added
- Writing high-performance code
- Importing Python packages
- Matrix multiplication
 - Python implementation
 - Importing the Python implementation into Mojo
 - Vectorize the innermost loop
 - Matmul tiles
 - Searching for the `tile_factor`
- Using Mojo's automatic setting to quickly write a `memset` function
- Ray tracing in Mojo

The functions

- Implement functions and variables to interact with the runtime and system environment
- Provide functions for bit manipulation
- Use the `base64` function for encoding strings
- Implement auto-tuning functionality with automatic tuning
- Tools for ND indexes
- Defining intrinsics

- Defining functions for memory manipulation

Projects

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- Designing a task management application
- Creation of a data management tool
- Desktop application development

Developing your neural network

- Reminder of the different learning models
- Focus on neural networks
- Vectors and weights
- Programming your regression model
- Import data
- Create your prediction
- Adjust error rate
- Add more layers to the network

Companies concerned

This 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 training to come, 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 course: 60% Practical, 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.

Sanction

A certificate will be issued to each trainee who completes the course.