

7<sup>th</sup> January 2023 3<sup>rd</sup> December 2023



**Artificial Intelligence &** Computer **Programming Course with Python** 



**RESEARCH AND TRAINING** 

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> "KNOWLEDGE IN THE FIELD OF AI (ARTIFICIAL INTELLIGENCE) AND COMPUTER PROGRAMMING PYTHON IS AN ADDITIONAL QUALIFICATION TO OBTAIN JOBS AT NATIONAL AND INTERNATIONAL LEVEL".

## **Topics to be covered**

#### Module 1 Introduction to Programming with Python I

Learn basic programming with Python, one of the most versatile and widely used programming languages! You'll first learn core programming concepts and fundamental Python syntax by writing code. You'll then learn how to write Python functions, manipulate strings and lists, and refactor your code to improve its structure and make it more modular.

#### Module 2 Introduction to Version Control & other developer workflows

We will cover how task management, version control and bug tracking are done in high-performance technology teams data science. You will also learn what AI realistically can--and cannot--do. Furthermore, you will configure your programming environment to work on AI problems with Python.

#### Module 5 Jupyter Notebooks & other AI tools

Learn how to use the key tools for working with data in Python, such as Jupyter Notebooks.

#### Module 6 Project Work & Submission

Once Module 4 is completed, you will start work on a project within a team with two other students that will be assigned by START.



Advance your skills with Python. You will build on your understanding of fundamental Python and learn some more advanced skills, including how to work with files on your computer's disk, how to retrieve data using a web API, and how to use Object-Oriented Programming (OOP) to create your own classes, objects, and methods. Understand how you can leverage open-source libraries to quickly add advanced functionality to your code. Apply Object-Oriented Programming to ensure that your code remains modular, clear, and understandable.

### **Module 4** Introduction to Artificial Intelligence

**Module 3** Introduction to Programming with Python II

You will learn about the foundations of AI and the meaning behind common AI terminology, including neural networks, machine learning, deep learning, and

# **Timing & Duration**

- Over 100 hours of time to be spent on building real-world skills as a computer developer with a fundamental understanding of Artificial Intelligence
- On Saturdays from 1pm to 4pm starting on 7<sup>th</sup> January 2023



Q&A 15 mints. Lecture 60-90 mints. Practicals 60 mints.



### **Pre Requisites**

There are no prerequisites for this program aside from basic computer skills. You should feel comfortable performing basic operations on your computer (e.g., opening files, folders, and applications, copying and pasting).

### **About the Lead Instructor**

The lead instructor, Renji John, is an AI practitioner and CEO of a deep-tech company based in the Netherlands that is focussed on AI & Robotics. He has extensive experience working in international companies in both technical & commercial roles in multiple countries.