

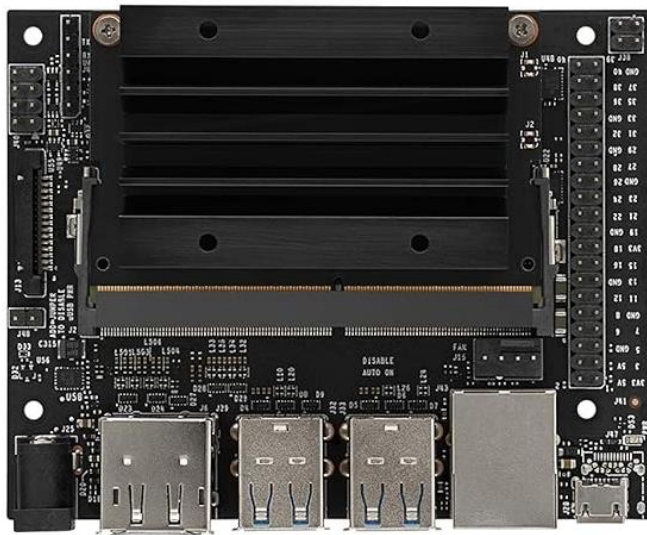


ARTIFICIAL INTELLIGENCE TRAINER

MODEL-AI100

This trainer has been designed with a view to provide practical and experimental knowledge of Artificial Intelligence (AI) with hardware and software programming.

SPECIFICATIONS



A. Microcontroller

1. A57 Microcontroller
2. CPU : Quad-core ARM A57 @ 1.43 GHz
3. OS : Linux
4. RAM : 4 GB 64-bit LPDDR4 25.6 GB/s
5. Ethernet Connectivity : Gigabit Ethernet
6. Wifi Connectivity : 802.11 b/g Wireless LAN Dual-Band 2.4/5.0 GHz, 3G
7. Bluetooth Connectivity : Bluetooth 5.0
8. USB Connectivity : USB 3.0 – 4 Nos. – Micro USB Port
9. Storage : microSD – 32 GB
10. Camera : 2 x MIPI CSI-2 DPHY lanes
11. Display : HDMI and Display port
12. Protocols : GPIO, I2C, I2S, SPI, UART
13. Power - 5V, 4A DC

B. Other Parts

1. Wifi Node : Wireless 2.4GHz Wifi Module – ESP32
2. LCD Display : 20 X 4
3. Display Monitor : 15 Inch LED
4. Storage : External SSD - 128GB
5. Camera : External Logitech – 270 – USB
6. Key Board : External Wireless
7. Mouse : External Wireless

C. Accessories:

1. 2 mm interconnection Sockets : On Board
2. 2 mm Banana Jumper Cable : 20 Nos
3. 2mm Banana Jack to Single pin jumpers : 2 Nos
4. USB to Micro USB Cable : 2 Nos
5. Ethernet Cable : 1 No
6. HDMI to HDMI Cable : 1 No
7. VGA 15 pin Male to HDMI Converter : 1 No
8. Power Supply Adaptor : 5V, 4A DC
9. SD Memory Card with Codes for All Experiments : 32 GB - 2 No
10. 16 GB Pen Drive : 1No
with Software, Library, Drivers, Codes, Soft Copy of Manual & Mobile App
11. Printed Practical Manual : 1 No
12. E-Books for AI Subject : 10 Nos
13. Mp4 Video Class for AI Subjects : 100 Nos
14. Power Supply : 230V AC, 50 Hz
15. Operating Conditions : 0-40 °C, 85% RH
16. Mains Cord : 1 No – On Board

EXPERIMENTS

A. Theory Experiments

1. To understand theory and working of Artificial Intelligence
2. To understand Operating System for Artificial Intelligence
3. To understand Protocols used for Artificial Intelligence
4. To understand USB, HDMI, Display Port Interface of Artificial Intelligence
5. To understand Ethernet Cable Interface for Artificial Intelligence
6. To understand micro SD Card Interface for Artificial Intelligence
7. To understand that how to connect 20 x 4 LCD Display to Artificial Intelligence
8. To understand Libraries and Algorithms used for Artificial Intelligence

1. Artificial Intelligence –AI - Experiments

1. Introduction to Artificial Intelligence - What is Artificial Intelligence
2. To understand theory of Block diagram and its internal Structure of AI
3. To understand History of Artificial Intelligence
4. To understand Fundamentals of Artificial Intelligence
5. To understand theory of Basic of AI and its architecture
6. To understand AI Programming Language – C, C++, Python and R
7. To understand AI Protocols
8. To understand Glossary of Technical words
9. To understand **AI Applications** in following Areas :
 - a. Natural Language Processing – NLP
 - b. Internet of Things – IOT
 - c. Preventive Maintenance
 - d. Cyber Security
 - e. Agriculture and Food Industry
 - f. Remote Healthcare Monitoring and Telemedicine
 - g. Environment Monitoring and Forecast
 - h. Warehouse and Logistics Monitoring
 - i. Retail Analysis
 - j. Intelligent Traffic Management
 - k. Energy Monitoring and Control
 - l. Home and Building Automation
10. To understand **algorithms** used for applications in AI :
 - a. TensorFlow – To make AI Frame work
 - b. Keras - For High Performance Numerical Computation
 - c. PyTorch
 - d. GoogleAI
 - e. Amazon web services - AWS
 - f. Caffe
 - g. Anaconda Navigator

11. To understand **software** used for AI :

- a. Linux OS
- b. NVIDIA JetPack having Board support package - BSP
- c. NVIDIA CUDA
- d. cuDNN
- e. TensorRT
- f. Anaconda Navigator
- g. Jupyter Notebook
- h. Computer Vision
- i. GPU computing
- j. Multimedia Processing

12. To understand **Libraries** for applications in AI :

- a. numpy
- b. pandas
- c. scikit-learn
- d. matplotlib
- e. seaborn
- f. pycuda
- g. cv2
- h. caffe
- i. torch
- j. pytorch
- k. TensorRt

13. To understand **Mathematics** used for AI :

- a. Linear Algebra – Linear Equations, Matrixs, Vectors
- b. Calculus – Differentiation, Integration, Gradient Descent,
- c. Statistics – Population, Parameter, Sample, Variable, Probability

14. To understand realtime image processing applications using Computer Vision – CV

15. To understand Minimax Algorithm in Artificial Intelligence

16. To understand Generative AI

17. To understand ChatGPT Applications

18. To understand Virtual Reality – VR and Augmented Reality AR
19. To understand OpenAI - Speech To Text converter
20. To understand LangChain
21. To understand Hill Climbing Algorithm in Artificial Intelligence
22. To demonstrate OpenAI
23. To demonstrate Virtual Reality – VR and Augmented Reality AR

CLASS ROOM TRAINING – ONLINE AND OFFLINE

The training includes Single user Classroom / laboratory teaching, learning and simulation software module. The content has easy explanation of various complex topics with animation and simulation for ease of student learning. It also supports learning through videos, graphs, charts, along with mandatory rich content and theory to understand fundamental concepts, interactive learning objects, FAQ, MCQ etc. The content is supplied in digital online access or license protection.

Contact US

Registered Office

SIGMA TRAINERS AND KITS
E-113, Jai Ambe Nagar,
Near Udgam School,
Drive-in Road,
Thaltej,
AHMEDABAD-380054. INDIA.

Factory

SIGMA TRAINERS AND KITS
B-6, Hindola Complex,
Below Nishan Medical Store,
Lad Society Road,
Near Vastrapur Lake,
AHMEDABAD-380015. INDIA.

Contact Person

Prof. D R Luhar – Director

Mobile : 9824001168

Whatsapp : 9824001168

Phones:

Office : +91-79-26852427

Factory : +91-79-26767512
+91-79-26767648
+91-79-26767649

E-Mails :

sales@sigmatrainers.com

drluhar@gmail.com