



## Technical Specifications

Artificial Intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think and act like humans. It involves the development of computer systems and software that can perform tasks which would typically require human intelligence, such as learning, problem-solving, decision-making, speech recognition, and face recognition.

### The Basic AI Trainer consist of

- AI CPU – Intel CPU Ultra
- 2 Cameras
- Wireless Keyboard and Mouse
- 15.6" Touch Screen Industrial Monitor
- 4 Input / 4 Output General Purpose Input Output (GPIO)
- Linux Operating System

### PRODUCT MODULES AI CPU INTEL ULTRA PROCESSOR SYSTEM

- Intel Core™ Ultra 7 Processor (i7-1360P, 4P + 8E)
- Chipset: MCP
- BIOS: AMI SPI 256 Mbit

### DISK CAPACITY

- 1.0 TB

### MEMORY

- Technology Dual Channel DDR4 300MHz
- Capacity 64GB (32 GBx2)
- Socket 2x 260 pin SO-DIMM

### GRAPHICS

- Controller: Intel® Iris® Xe Graphics
- HDMI: HDMI 2.0b
- Maximum Resolution: Up to 4096 × 2160 @ 60 Hz
- Multi Display: Quad Display (including outputs from Type-C)

### EXPANSION SLOT

*Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.*



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- M.2/WLAN Intel® Iris® Xe Graphics
- AUDIO
- Interfisce Realteck ALC233, High-ction Audio

#### ETHERNET

- Controller / Speed: Intel® I226-LM
- Speed: 10 / 100 / 1000 / 2500 Mbps
- Support: vPro
- Connector: 1 × RJ-45

#### FRONT I/O

- 2 × USB 3.2 Gen 2 (Type-A)
- 1 × USB4 / Thunderbolt™ 4 (supports DP 1.4a display output)
- 1 × USB 3.2 Gen 2 (Type-C, supports DP 1.4a display output)
- 1 × Audio Jack (Headphone & Microphone)

#### REAR I/O

- 2 × HDMI 2.0b
- 1 × 2.5 Gigabit LAN
- 2 × USB 3.2 Gen 2 (Type-A)
- 1 × DC Jack

#### OTHERS

- OS Support: Ubuntu 24.04 LTS

#### CAMERA 1

- Resolution: 1280 × 720p
- Focus Type: Auto Focus
- Microphone: Built-in
- Interface: USB, Driver-Free
- Compatibility: Notebook / Computer
- Product Size: 70 × 50.7 × 44 mm

#### CAMERA 2

- Maximum Resolution: 720p @ 30 fps
- Image Sensor: 0.9 MP
- Focus Type: Fixed Focus
- Lens Type: Plastic
- Built-in Microphone: Mono
- Microphone Range: Up to 1 m
- Diagonal Field of View (DFoV): 55°
- Universal Mounting Clip for laptops, LCDs, or monitors

#### WIRELESS KEYBOARD AND MOUSE

- Connection Type: USB Receiver
- Connection Range: Up to 10 meters
- Keyboard: 79 Keys
- Mouse: 3 Buttons

#### TOUCHSCREEN MONITOR

- Touch Screen Monitor 15.6'

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### DIGITAL V/O

- 4 Digital Inputs
- 4 Digital Outputs (Relay Contact 10A)
- Input Terminal: 4 mm
- Output Terminal: Banana Socket
- HDMI Port

### POWER SUPPLY MODULE

- AC POWER SUPPLY: 100-240VAC
- DC POWER SUPPLY: 24VDC, 12VDC, 5VDC

### OPERATING SYSTEM

LINUX UBUNTU 24.04 Ubuntu 24.04 is a future version of the popular Ubuntu operating system, which is based on the Linux kernel. While specific features of Ubuntu 24.04 may not be known yet, as it is not officially released as of my last update in 2023, we can expect it to follow the typical trends and improvements seen in previous Ubuntu releases.

**WEB APPLICATION** — JUPYTER NOTEBOOK Jupyter Notebook is an open-source web application that allows you to create and share documents containing live code, equations, visualizations, and narrative text. It is widely used in data science, scientific computing, machine learning, and education for its interactive and collaborative capabilities.

### SOFTWARE TOOLKIT - OPENVINO

OpenVINO (Open Visual Inference and Neural Network Optimization) is an open-source toolkit developed by Intel. It is designed to accelerate the development of high performance computer vision and deep learning applications. OpenVINO allows developers to optimize and deploy deep learning models on various Intel hardware, including CPUs, GPUs, VPUs (Vision Processing Units), and FPGAs (Field Programmable Gate Arrays).

### LEARNING OBJECTIVES

- Introduction to Artificial Intelligence (AI)
- Introduction to AI Training Kit (Hardware, Ubuntu Setup and Jupyter Notebook Setup)
- Introduction to OpenCV

### Experiments with OpenVINO toolkits, for example:

- Experiment 1 : Image Classification
- Experiment 2 : Image Segmentation
- Experiment 3 : Hello detection (text detection)
- Experiment 4 : Object Detection Webcam
- Experiment 5 : Image Colorization
- Experiment 6 : Meter-reader
- Experiment 7 : FaddleOCR with OpenVINO
- Experiment 8 : Optimize YOLOV8 Keypoint detection with OpenVINO

### Experiments with AI Application Module

- Experiment 1 : Gesture Volume Control
- Experiment 2 : Hand Gesture Finger Counter
- Experiment 3 : Color Detection with Linear Actuator
- Experiment 4 : Color Detection with AC LED
- Experiment 5 : Left Right Hand Detection
- Experiment 6 : Object Detection with Strobe Light

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- Experiment 7: Motion Control with Robotic Arm
- Experiment 8: IoT Module

**Manuals:**

- All manuals are written in English
- Model Answer
- Teaching Manuals

**General Terms:**

- Accessories will be provided where applicable.
- Manuals & Training will be provided where applicable.
- Designs & Specifications are subject to change without.

**Artificial Intelligence Trainer Learning Platform (50 Student, For 2 Yrs)**

- Ss Cloud-based solution with AI-driven features to support educational providers in delivering ARTIFICIAL INTELLIGENCE TRAINER training.
- Includes a centralized marketplace for learners worldwide to discover and enroll in educational programs, facilitating an international reach for institutions.
- Includes a holistic platform combining course creation, management, and assessment tools, supporting all aspects of online education without external dependencies.
- Automatically creates portfolios for students based on acquired skills, providing evidence-based records to share with potential employers.
- Enables flexible and stackable digital credentials for courses, supporting skill verification and career progression for learners.
- Includes a comprehensive Learning Platform supporting blended and lifelong learning approach, adaptable to various educational programs.
- Designed to accommodate multiple formats of online learning, ensuring secure and adaptable program delivery.
- Equipped with tools for designing interactive activities and fostering community, enhancing engagement and collaboration among learners.
- Fast implementation with a simplified setup process, requiring minimal IT resources, ideal for institutions at any stage of digital adoption.
- Robust tools that empower education providers to create, manage, and distribute custom courses, accessible to educators with varying technical Expertise.
- Comprehensive resources to support students in gaining new skills or updating existing ones, enhancing their employability.
- A fully scalable platform capable of handling growth in course offerings, learner numbers, and provider expansion without compromising quality.
- Support for creating high-quality courses that increase the institution’s global presence and reputation.
- A unified framework for micro-credentials, enhancing credential recognition and portability.
- E-portfolios for students that document skill acquisition and achievements, supporting career development and employability.
- Reduces operational costs associated with course delivery, enabling institutions to allocate resources effectively.
- Focus on employable skills through targeted learning pathways, directly aligning with workforce requirements.
- By offering quality courses and comprehensive student support, institutions can boost their position in educational rankings.
- Access to resources and tools that enable educators to deliver superior learning experiences.

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