UBTECH EDUCATION

UGOT

UGOT Education Solution

Provides every student with learning opportunities to explore Artificial Intelligence and Robotics in depth

Comprehensive UGOT Education Solution

Multi-mimetic Robots

- Versatile Builds
- High-Performance Computing
- Open Source System

Curriculum System

- Regular Courses
- Club Courses
- Competition Courses

Comprehensive Services

- Consultation Service
- Training Services
- Teaching Support
- Academic Research Support

Multi-mimetic Robots

Versatile Builds | High-Performance Computing | Open Source System

Embodying the characteristics of true AI and robotics

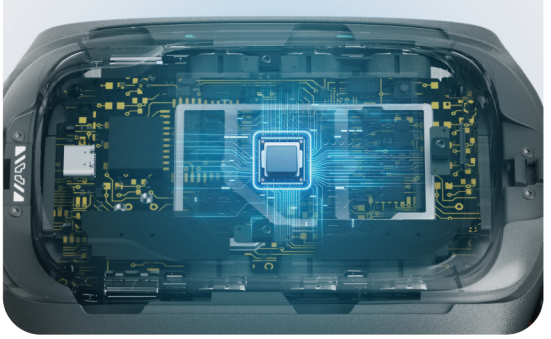
Fast Assembly for 7 Unique Robots

Modular Design \ Innovative Dial Lock \
Two-minute Reconfiguration \ Imagination Inspired

High-performance Computing Pushes the Boundaries of AI Education

4-core CPU with dedicated NPU and GPU,
10 trillion computations per second.

- Multi-algorithm Parallel Processing
- Advanced Algorithm Models
- Offline Model Training
- Diverse Teaching Scenarios



Open Ecosystem
Creating Infinite Possibilities

Supports third-party open-source hardware such as Micro Bit, Arduino, Raspberry Pi, and compatible DIY components, and provides an open Python SDK.

Extensive Collection of AI Algorithms and AI Applications

Intelligent speech, machine vision, motion control empower AI-enabled education.

Speech

6+

- VAD
- ASR
- TTS
- NLP
- 360°Far-Field Speech Recognition
- . . .

Vision

17+

- QR Code Recognition
- Facial Recognition
- OCR
- License Plate Recognition
- Facial Feature Recognition
- Gesture Recognition
- Color Recognition
- Posture Recognition
- Custom Model Training

Motion Control

7+

- Self-balancing Car Algorithm
- Odometry Algorithm
- Robotic Arm Motion Algorithm
- Quadruped Locomotion Control Algorithm
- Wheeled-leg Locomotion Control Algorithm
- . . .

Long Battery Life Sufficient for AI Study

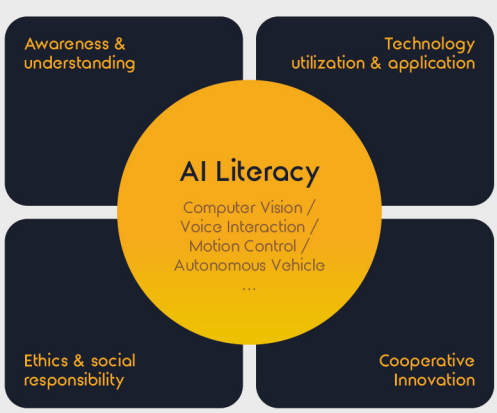
2600mAh battery capacity supports 2 hours of AI instruction.

Curriculum System

The Curriculum is designed to focus on international guideline standards such as CSTA, AI4K12 and also the UBTECH Artificial Intelligence Knowledge Mapping.

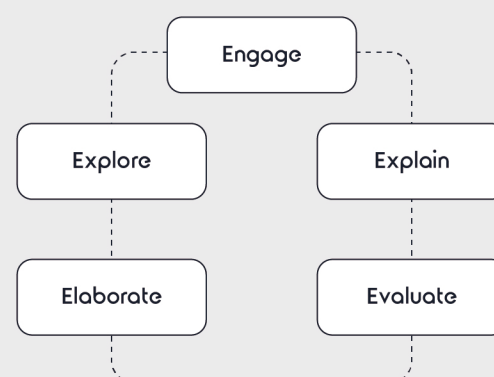
Curriculum Name	AI City Guardian Kit	AI Space Exploration Kit
Class Hour	30 Class Hours	30 Class Hours
Recommended Grades	Primary School/Grade 5~ Grade 6	Middle School/Grade 7~Grade 8
Programming Level	CSTA 2	CSTA 2
AI Capabilities	Principles of Artificial Intelligence Technology Machine Learning	Artificial Intelligence Languages Artificial Intelligence Technology Applications
Learning Tools	uCode (graphical programming)	uPython
	AI City Guardian Kit+ Props Kit+ Venue Map Kit	AI Space Exploration Kit+ Props Kit + Venue Map Kit
Interdisciplinary speciality	Maths, Science, Physics, IT	
Main lines of the course	Intelligent Control and Decision Making	Artificial Intelligence and Algorithms
	From simple machinery to artificially intelligent robots	

UBTECH Artificial Intelligence Knowledge Mapping



5E Model

The curriculum design integrates the concepts of large units and PBL projects and adopts the "5E" model to provide scientific guidelines for teaching and learning practices.



AI City Guardian Kit

2 Decks | 4 Models | 60 Pieces

- Multi-mimetic robot
- For primary school students
- Supporting learning aids
- Includes 3D dynamic drawings and visual programming

Forms

Engineer Vehicle

Mecanum Wheel Car

Self-balancing Car

Transfarming Car

Core Components

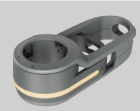
1 Main Controller

1 TOF Module

1 Camera Module

4 Servos

4 Gear Motors



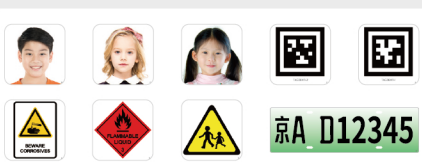
6 Bionic Connectors

4 McNumm Wheels

4 Rubber Wheels

Props Kit

- EVA terrain module, cubes, balls, cards, etc.
- Tasks include crossing obstacles, handling objects, image recognition, face recognition, pose recognition, colour recognition, etc.



Bluetooth Controller

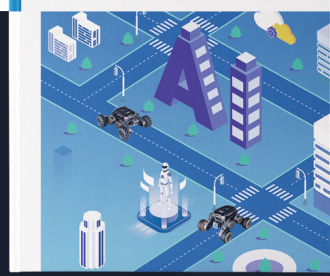
- Learning props
- Remote control

Map Kit

- Learning props
- Used for the task of patrolling the line

Length:2m Wide:0.6m

AI City Guardian



Recommended for

Primary School/Grade5-6

15 topics | 30 class hours

Curriculum Description

Based on the problems that may be encountered in real life,the course constructs virtual story situations, guides the students to use AI technologies such as intelligent voice and machine vision to realize the various functions of UGOT to help the city to solve a variety of emergency problems and to cultivate students' problem-solving ability and social responsibility.

AI Skills and Competency Literacy

- Human-Computer Interaction
- Intelligent Speech
- Machine Vision
- Information Consciousness
- Computational Thinking
- Digital Learning and Innovation

Programming Tool - uCode

UGOT access to uCode graphical programming software and support for multi-programme burning and calling.

- Graphical Programming
- AI Hardware Open Patform
- The graphics programming language can be shown as Python
- Upload Mode for Advanced Programming

Curriculum Content

Session 1

Ruin Rescue (8 Class Hours)

In this session, students will understand the mechanism, function, and characteristics of the transformation vehicle, learn sound source localisation, speech recognition, speech synthesis, multi-computer communication, and other knowledge to achieve the application of UGOT in city rescue scenarios.

Session 2

Searching for People in A Crowd (8 Class Hours)

Upon completion of the learning of this session, students will learn motion control, face recognition, number plate tracking, and patrol algorithms of the Mecanum-wheel vehicle form of UGOT and, through programming, implement the application of quickly searching for and rescuing lost people.

Session 3

Ecological Protection (6 Class Hours)

In this session, students will learn to narrow the search range through colour recognition and tracking, locate hazardous chemicals through image recognition, and finally control car body posture through a gyroscope to safely recycle hazardous chemicals.

Session 4

Mission Accomplished (6 Class Hours)

Upon completion of the learning of this unit, students will acquire knowledge of recognising AprilTag codes, traffic signs, and traffic officers' gestures using UGOT. They will also develop skills in using robotic arms to grasp objects accurately, allowing them to complete handling tasks quickly.

Activity Session

Community Rescue (2 Class Hours)

In this session, students are tasked with unleashing their imagination and crafting new crisis scenarios for the city while utilising appropriate UGOT forms and artificial intelligence technology to solve these crises.

AI Space Exploration Kit

3 Decks | 5 Models | 80 Pieces

- Multi-mimetic robot
- For middle school students
- Supporting learning aids
- Includes 3D dynamic drawings and python programming

Forms

Wheeled & Legged Robot

Quadruped Robot

Spider Robot

Self-balancing Car

Transforming Car

Core Components

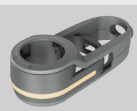
1 Main Controller

1 TOF Module

1 Camera Module

8 Servos

4 Gear Motors



10 Bionic Connectors

4 Rubber Wheels

4 Arc Feet

4 Point Feet

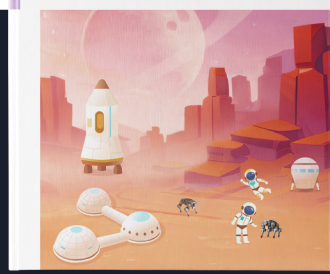
Props Kit

- EVA terrain module, cubes, balls, cards, etc.
- Tasks include crossing obstacles, handling objects, image recognition, face recognition, pose recognition, colour recognition, etc.

Bluetooth Controller

- Learning props
- Remote control

AI Space Exploration



Recommended for

Middle School/Grade7-8

14 topics | 30 class hours

Curriculum Description

With interstellar exploration as the background, the course integrates science and technology into science fiction story contexts, constructing virtual scenarios such as flight plans, lunar exploration, cave exploration, and Mars base. Through these topics, the course guides students to use intelligent speech, machine vision and other artificial intelligence technologies to realize the functions of UGOT and help scientists to solve various urgent problems encountered in the process of interstellar exploration, and cultivate students' problem-solving ability and sense of social responsibility.

AI Skills and Competency Literacy

- Human-Computer Interaction
- Intelligent Speech
- Machine Vision
- Machine Learning
- 21st Century Skills
- Digital Learning and Innovation

Programming Tool - uPython

UGOT access to uPython which enables more open programming, opens up new possibilities for our programming teaching to implement AI recognition, motion control, and other such interesting features.

- Python Programming
- Supports Software-hardware Interaction
- Code Library Visualization Management
- Code Autocompletion Function

Curriculum Content

Session 1

Flying Plan (6 Class Hours)

In this session, students will learn the fundamental operating methods of UGOT and basic Python programming knowledge. They will use Python programming to carry out basic operations and pre-launch status checks for UGOT.

Session 2

Lunar Exploration (6 Class Hours)

In this module, students will understand the structure, function, characteristics, and control methods of lunar rovers and wheeled robots, experiment with Python coding to implement the corresponding functions, and complete the exploration task.

Session 3

Cave Mystery (6 Class Hours)

In this unit, students will understand the structure, function, characteristics, and control methods of quadruped spiders, learn the basic knowledge of image acquisition and image recognition, implement the corresponding functions through programming, and complete the exploration task.

Session 4

Mars Base (8 Class Hours)

In this unit, students will understand the structure, functions, characteristics, and control methods of quadruped robots and learn the application of artificial intelligence knowledge such as face recognition, speech recognition, and object tracking.

Activity Session

Smooth Return (4 Class Hours)

In the activity session, students will synthesise the knowledge and skills they learned this year to solve problems.

Comprehensive Services

Builds a multi-scenario AI education RaaS based on AI and robot technology

Founded in 2012, UBTECH Technology is a leading global enterprise in AI and humanoid robots.

UBTECH Artificial Intelligence Education solution is based on the company's self-developed full-stack technology for humanoid robots. With the technical advantages of AI and robots, UBTECH has continuously empowered AI education to provide quality courses and comprehensive AI education ecosystems.

Innovation Talents Training

Industrial Application Talents Training

General AI & Scientific Literacy Improvement

RaaS
Robot as a Service

Service System

- Consultation Service
- Training Services
- Teaching Support
- Academic Research Support
- Industrial Training
- Career Guidance
- Event Service
- Achievement Exhibition Service
- Assessment Service & Certification
- Professional Construction
- Job Skills Certification
- ...

Products and Content System

AI Hardware System


Assembled Robot


Multi-mimetic Robot


Humanoid Robot

Software System

- uCode
- uPython
- Crealand

Content System

Platform Support System

Technology Platform

- AI Education Platform
- OMO Operation Management Platform

Ecological Resources

- Society / Association
- Experts and Scholars
- Research Institutions
- Enterprise Partnership

UBTECH EDUCATION

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