



Huawei ICT Academy

A Global Talent Ecosystem

Pallavi Malhotra

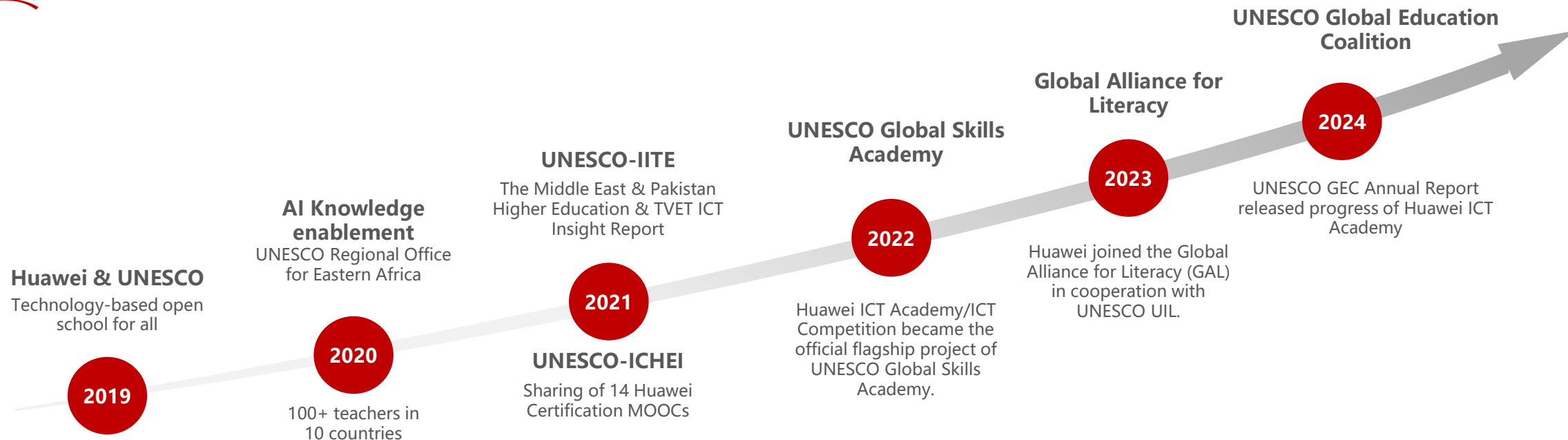
Director for Talent Alliance, Europe

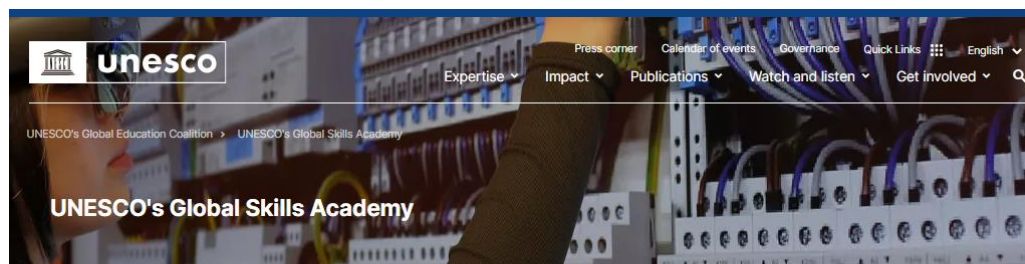




Working with UNESCO to achieve SDG 4

In support of
Global Education Coalition
launched by UNESCO





Huawei

Huawei, partner of UNESCO's Global Skills Academy

Huawei is a leading global provider of information and communications technology (ICT) infrastructure and smart devices. It has 207,000 employees and operates in over 170 countries and regions, serving more than three billion people around the world. Huawei is committed to bringing digital to every person, home and organization for a fully connected, intelligent world.

Through two major operations in collaboration with UNESCO's Global Skills Academy -- Huawei ICT Academy and Huawei ICT Competition, it has trained 250,000 students in year 2023 from over 2,700 universities and colleges across 100 countries and regions with practical skills for the ICT industry and the community. Since its launch in 2015, the Huawei ICT Competition is celebrating its 8th year success. The 8th Huawei ICT Competition is currently underway, and it has attracted 170,000 students from over 2,000 universities and colleges across 85 countries and regions.



The training course in detail

Programme structure

The Huawei ICT Academy offers enormous digital training opportunities based on its industrial expertise in fields such as 5G, cloud service, cloud computing, storage, AI, IoT, Datacom, Big Data, WLAN, security, and intelligent computing.

In particular, the UNESCO Global Skills Academy-Huawei ICT Academy program is organized in two sections:

- General courses: 12 learning modules, providing an introductory overview to the latest technology trends
- Professional courses: 7 learning modules, giving more in-depth knowledge to each of the technological topics.

Training offer

Huawei offers two training opportunities: Huawei ICT Academy and the annual Huawei ICT Competition. By partnering with academies around the world, Huawei ICT Academy delivers online ICT training with certification possibility, and develops talents with practical skills for the ICT industry and the community. The annual Huawei ICT Competition aims to foster innovation, healthy competition and idea exchange. By bringing up solutions in three different tracks (cloud, computing, network), students could enhance their ICT knowledge and practical skills.

[Access Huawei's training offer](#) →

UNESCO Website

<https://www.unesco.org/en/global-education-coalition/skills-academy/huawei>

UNESCO Global Skills Academy - Huawei ICT Academy Digital Skills Learning Project

2024-04-17 17:44

Huawei Talent Website



In order to support the achievement of UNESCO's SDG4 goals and improve the digital skills, Huawei ICT Academy cooperates with the UNESCO Global Skills Academy to launch the open online learning platform for teachers and students of UNEVOC as well as lifelong learners. The platform supports learning content in five languages. You will learn about the latest ICT, including cloud, computing, and AI. Take the courses to know more and secure your Huawei Certifications.

Choose course language and start your learning journey!



UNESCO GSA – Huawei ICT Academy Digital Skills Learning Project

launched on April 2024

<https://e.huawei.com/en/talent/news/#!/details?consultationId=4177>

Free mode

HUAWEI

Huawei ICT Academy

UNESCO GLOBAL SKILLS ACADEMY

UNESCO Global Skills Academy –Huawei ICT Academy

118 Learner(s)

2023-12-04 to 2025-12-31

Valid Period

<https://e.huawei.com/en/talent/news/#/details?consultationId=4177>

AI related courses offered on GSA – Huawei ICT Academy Partnership Site

1 General Course

12 Learning resources

Course

Mandatory

Overview of IoT Technologies - Overview of IoT ...

2% Learned

Course

Mandatory

5G Basics: What it's all about - 5G Basics: What it's all about

0% Learned

Course

Mandatory

5G Network Architecture and Key Technologies - 5...

0% Learned

Course

Mandatory

Overview of AI - Overview of AI

13% Learned

Course

Mandatory

Search and AI - Search and AI

0% Learned

Course

Mandatory

Development and Basic Concepts of Cloud Computing - ...

0% Learned

Course

Mandatory

Information Representation and Data Organization... Rerepresentation and Data Organization...

0% Learned

Course

Mandatory

Data Management and Analytics - Data Management and...

1% Learned

Course

Mandatory

Computer Network -

Course

Mandatory

Algorithm and

Course

Mandatory

Cloud Advanced:

Course

Mandatory

Digital Power -

Huawei ICT Academy Digital Badges

Learn more

2 Professional Course

7 Learning resources

Course

Mandatory

Data Communication and Network - Data Communication ...

0% Learned

Course

Mandatory

Artificial Intelligence Technology and Applications - null

0% Learned

Course

Mandatory

Principles and Applications of Cloud Computing ...

0% Learned

Course

Mandatory

5G Network and Applications - 5G Network and ...

0% Learned

Course

Mandatory

Principles and Applications of WLAN - Principles and...

0% Learned

Course

Mandatory

Internet of Things Technology and Applications - Interne...

0% Learned

Course

Mandatory

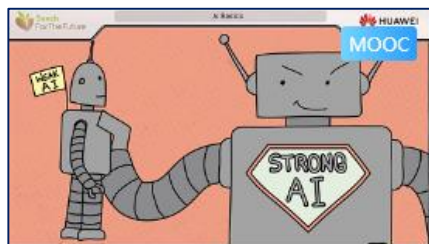
Data Storage (Offline:2025-09-30) - Data Storage ...

0% Learned



AI Introductory Course Content

In support of
Global Education Coalition
launched by UNESCO



Overview of AI

Free

113076Learned

Course Introduction

Course Contents

- ▶ 1. Machines that Think
- ▶ 2. Schools of Thought
- ▶ 3. Strong AI vs Weak AI
- ▶ 4. Three Major Technology Directions
- ▶ 5. AI Everywhere
- ▶ 6. AI Controversies
- ▶ 7. Bright Prospects



Search and AI

Course Introduction

Course Contents

▼ Search and AI

- ▶ Preface
- ▶ 1. Zero sum Game and Minimax Algorithm
- ▶ 2. Game Tree and Search
- ▶ 3. Tree Traversal
- ▶ 4. Game Tree Search and Alphabeta Pruning
- ▶ 5. Famous Computer Games
- ▶ 6. Heuristic Search
- ▶ 7. AI Development History and Research
- ▶ 8. Neural Network
- ▶ 9. Typical AI Applications



Algorithm and Program Design

Course Introduction

Course Contents

Introduction

1. Greatest Common Divisor

2. Iteration

3. Bisection Method

4. Recursion

5. Search and Backtracking

6. Monte Carlo algorithm





MOOC

HCIA-AI V3.5 Course(Offline:2025-09-30)

Free 49016Learned

Professional Course Content

Course Introduction

Course Contents

Introduction of HCIA-AI

- ▶ 1. Artificial Intelligence Overview
- ▶ 2 Machine Learning Overview
- ▶ 3 Deep Learning Overview
- ▶ 4 AI Development Framework
- ▶ 5 Introduction to Huawei AI Platform
- ▶ 6 Cutting-edge AI Applications
- Final Exam
- ▶ Training Materials and Experiment Guide



MOOC

Artificial Intelligence Technology and Application

Combination of theory and practice
Full mastery of algorithms and practices

Artificial Intelligence Technology and Applications

Free 8978Learned

Course Introduction

Course Contents

- 1.Artificial Intelligence Overview
- ▶ 2.Python Programming Basics
- ▶ 3.Machine Learning Overview
- ▶ 4.Deep Learning Overview
- ▶ 5.AI Development Framework
- ▶ 6.Introduction to Huawei AI Platforms
- 7.Cutting-edge AI applications
- 8.Quantum Computing and Machine Learning

In support of
Global Education Coalition
launched by UNESCO



1. 'Free training resources' – Open to ALL
2. Courses offered in 5 different language
3. 'Digital Badges' *(55 Students have achieved a Digital Badge)*
4. 'Employability Skills' – Increased job opportunities
5. Opportunity to take globally recognised 'Industry Certifications'



How students are using ICT Academy resources to create their own projects for the Huawei ICT Competition



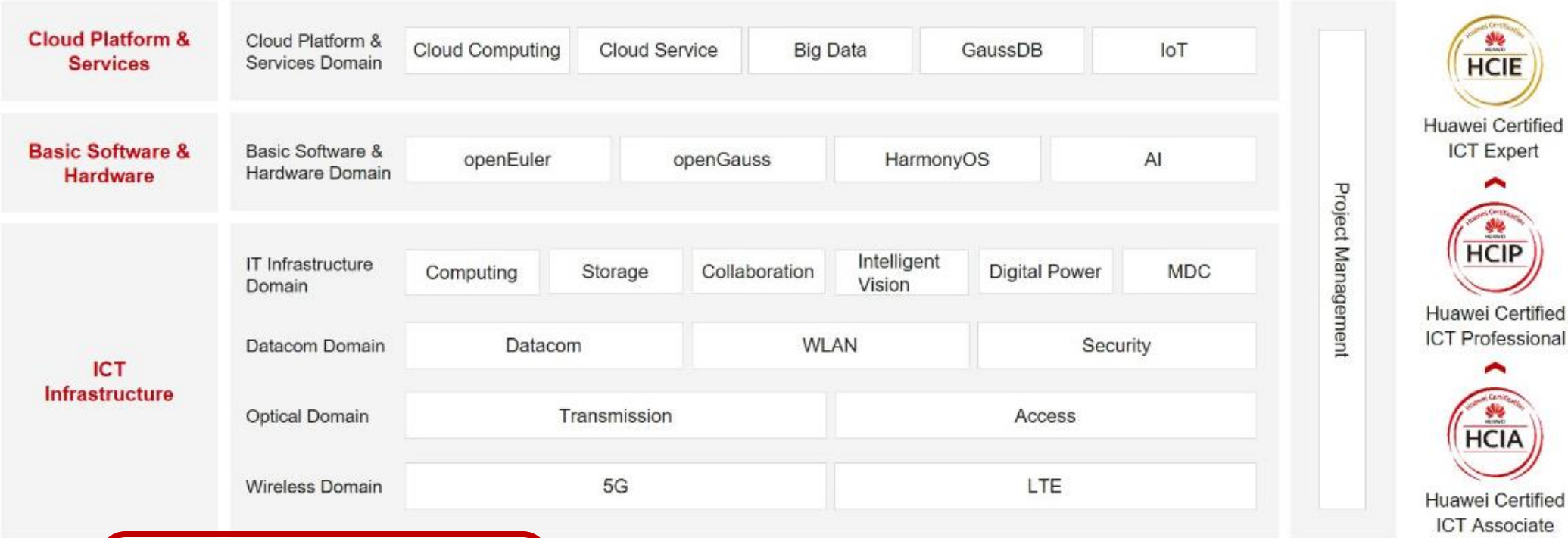
Huawei Certification:

Building a comprehensive ICT certification system to support digital skills



3 categories 6 major domains

23 certification fields



23

110+

5,000+

1,000,000+

33,000+

Certification fields

Certification exams

Testing centers

Huawei certified talent

HCIEs

Data as of December 2024



Huawei Certification



Huawei Curricula

– A Comprehensive Range of Technology Directions and Courses

In support of
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Huawei ICT Academy Course Catalog



For each Technology direction there are:

1. General Courses
2. Professional Industry Certification Courses (*HCIA/ HCIP Certification Courses*)

Academy Curriculum classification

General Courses



For students who'd like to start exploring opportunities in tech

- No requirements for students' majors
- Free of charge
- Usually self-study
- 2 – 4 lessons/course

Professional Courses



For students who'd like to acquire the practical skills for entry-level technical positions

- Closely related to Huawei certifications that are widely recognized across industries
- Usually instructor-led and about 32-128 lessons per course
- Combination of hands-on practice and interactive experience

Correspondence Reference Table of College Majors/Courses and Huawei ICT Academy Courses

No.	Subject Specialty	Basic/Core/Elective Courses	Huawei ICT Academy General Courses										Huawei ICT Academy Professional Courses									
			Computer Network	Information Representation and Data Organization	Data Management and Analytics	Search and AI	Overview of AI	Development and Basic Concepts of Cloud Computing	Cloud Advanced	Introduction to 5G	Network Architecture and Key Technologies	Overview of IoT Technologies	Algorithm and Program Design	Data Communication and Network	Principles and Applications of WLAN	5G Network and Applications	Data Storage	Principles and Applications of Cloud Computing	Internet of Things Technology and Applications	Artificial Intelligence Technology and Applications		
1	General Courses	Computer Basics	●	●																		
2	General Courses	Introduction to Artificial Intelligence				●	●															
3	General Courses	Python programming																				
4	General Courses	Operating System																				
5	Computer Science and Technology	Introduction to Computing	●	●	●																	
6	Computer Science and Technology	Principle of Computer Composition	●																			
7	Computer Science and Technology	Computer Architecture	●			●																
8	Computer Science and Technology	Computer Network	●			●																
9	Computer Science and Technology	Network and Computing	●			●																
10	Computer Science and Technology	Artificial Intelligence				●	●															
		Principles of																				

Technical Direction	Course Name (English)	Version	Release Date	Category
Datacom	HCIA-Datacom	V1.0	2020/4/18	General Courses
	HCIP-Datacom-Core Technology	V1.0	2020/10/20	General Courses
	HCIP-Datacom-Advanced Routing & Switching Technology	V1.0	2020/10/20	General Courses
	Datacom Data Communication and Network	V1.0	2020/12/1	Professional Courses
	Datacom Computer Network	V1.0	2021/12/31	Professional Courses
	AI HCIA-AI	V3.5	2022/12/30	General Courses
	AI Artificial Intelligence and applications	V3.0	2021/3/29	General Courses
	AI Machine Learning	V1.0	2021/3/23	Professional Courses
	AI Deep Learning	V1.0	2021/12/22	Professional Courses
	AI Python Program Design	V1.0	2022/1/5	Professional Courses
AI	Overview of AI	V1.0	2021/8/24	General Courses
	Search and AI	V1.0	2021/10/28	General Courses
	Cloud Computing HCIA-Cloud Computing	V5.0	2022/8/1	General Courses
	Cloud Computing Development and Basic Concepts of Cloud Computing	V1.0	2022/12/23	General Courses
Cloud Computing	Cloud Advanced: Architecture and Technologies	V1.0	2022/12/21	Professional Courses

Courses available in different languages

Technical Direction	Course Name (English)	Version	Release Date	Course Type	Chinese	English	French	Arabic	Portuguese	Spanish	German	Japanese	Korean
Datacom	HCIA-Datacom	V1.0	2020/4/18	Certification Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
	HCIP-Datacom-Core Technology	V1.0	2020/10/20	Certification Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
Datacom	HCIP-Datacom-Advanced Routing & Switching Technology	V1.0	2020/10/20	Certification Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
Datacom	Data Communication and Network	V1.0	2020/12/1	Professional Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
Datacom	Computer Network	V1.0	2021/12/31	General Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
AI	HCIA-AI	V3.5	2022/12/30	Certification Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
AI	Artificial Intelligence and applications	V3.0	2021/3/29	Professional Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
AI	Machine Learning	V1.0	2021/3/23	Professional Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
AI	Deep Learning	V1.0	2021/12/22	Professional Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
AI	Python Program Design	V1.0	2022/2/3	Professional Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
AI	Overview of AI	V1.0	2021/6/24	General Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
AI	Search and AI	V1.0	2021/10/28	General Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cloud Computing	HCIA-Cloud Computing	V5.0	2022/8/1	Certification Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cloud Computing	Development and Basic Concepts of Cloud Computing	V1.0	2022/12/23	General Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cloud Computing	Cloud Advanced Architecture and Technologies	V1.0	2022/12/21	General Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cloud Computing	Principles and Applications of Cloud Computing	V4.0	2021/11/29	Professional Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
Security	HCIA-Security	V4.0	2022/5/31	Certification Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
5G	HCIA-5G	V2.0	2021/6/8	Certification Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
5G	5G Basics: What it's all about	V1.0	2022/05/17	General Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
5G	5G Network Architecture and Key Technologies	V1.0	2022/12/21	General Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
5G	5G Network and Applications	V2.0	2021/11/29	Professional Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cloud Service	HCIA-Cloud Service	V3.0	2021/9/30	Certification Course	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cloud Service	Cloud Service Management and Application	V3.0	2022/1/3	Professional Course	✓	✓	✓	✓	✓	✓	✓	✓	✓

Academy Curriculum Overview Map

👤 Instructor training 📖 Self-study ⭐ Certification-associated

Professional Courses

Connectivity

- 👤⭐ Data Communication and Network
- 👤⭐ Principles and Applications of WLAN
- 👤⭐ 5G Network and Applications

Cloud & Computing

- 👤⭐ Principles and Applications of Cloud Computing
- 👤⭐ Data Storage
- 👤⭐ Artificial Intelligence and Applications

App Develop

- 👤⭐ Internet of Things and Applications

General Courses

- 👤 5G Basics: What it's all about
- 👤 5G Network Architecture and Key Technologies
- 👤 Overview of AI
- 👤 Search and AI
- 👤 Development and Basic Concepts of Cloud Computing
- 👤 Information Representation and Data Organization
- 👤 Data Management and Analytics
- 👤 Cloud Advanced Architecture and Technologies
- 👤 Computer Network
- 👤 Overview of IoT Technologies
- 👤 Digital Power
- 👤 Algorithm and Program Design



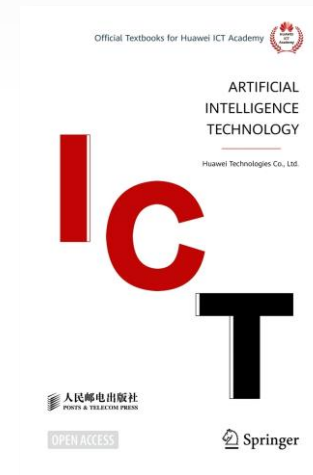
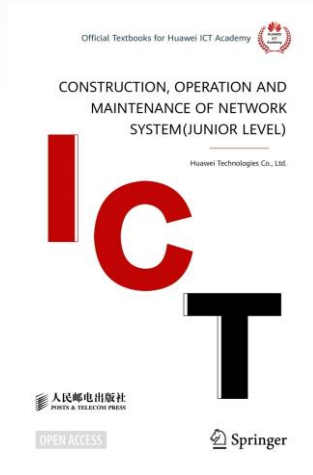
Huawei ICT Academy Teaching Materials



Teaching Instruction Committee + Universities + Publishing houses + Huawei

Training material recommended by the Huawei ICT Academy (5)

To deepen cooperation with colleges and universities and drive the cultivation of ICT talent, Huawei has published official Huawei ICT Academy Textbooks with Posts & Telecom Press and Springer, which cover four technical domains: AI, cloud computing, data communication, and databases. The books are published as open access content and can now be downloaded for free.



Book catalog



Huawei ICT Competition

An International Talent Platform

In support of
Global Education Coalition
launched by UNESCO



Promoting learning
through competitions

Free online courses
Promoting training
through competitions

Talent Job Fair
Promoting employment
through competitions

Global Platform for showcasing Talent



ICT Competition: Participation from **960,000+** students from **2,000+** universities and colleges across **100+** countries/regions.

An Annual Event – now in its 10th year

HUAWEI ICT COMPETITION 2024-2025



Team



Mihailo Knežević
PhD Student and Assistant



Stefan Ćirković
PhD Student and Junior Assistant



Tatjana Lazović
PhD Student



9th Competition **Global Grand Prize Winners**

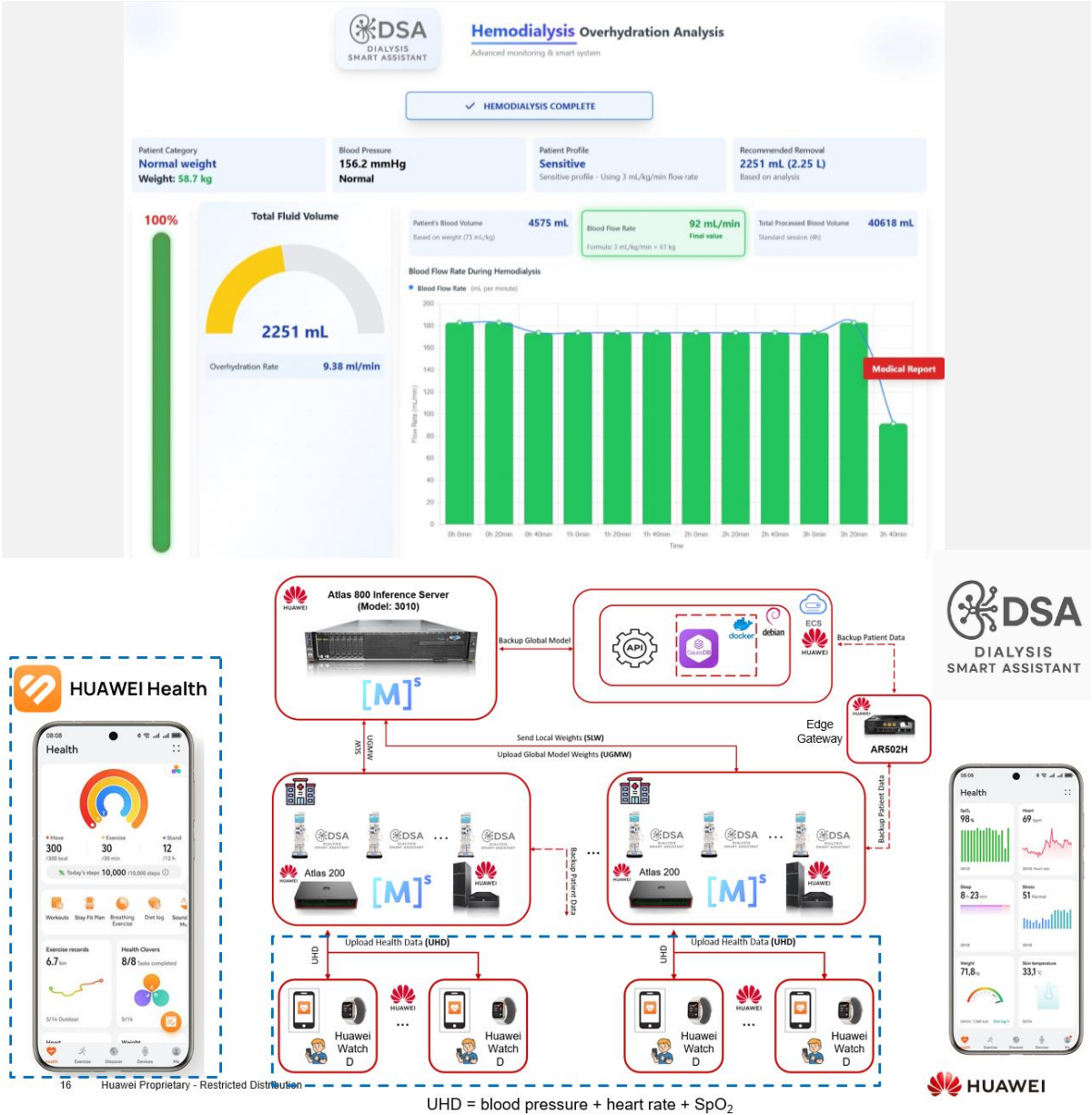
Faculty of Technical Sciences Cacak,
University of Kragujevac, Serbia

AI based Haemodialysis

Project: **Hemonext**

We came up with the idea of developing an application that uses machine learning and artificial intelligence methods to determine the optimal amount of fluid that needs to be removed during hemodialysis, as well as the optimal speed at which the process is carried out, based on the patient's data and his or her parameters during hemodialysis.

Serbia-University of Kragujevac: HemoNext



Enhanced Optimization of Fluid Volume Control in Hemodialysis Using Federated Learning

【Huawei Technology】	Huawei Cloud、MindSpore、AIoT, Huawei Health
【Other Technology】	HTML, CSS, JavaScript, Python, gRPC, medic. sensors
【Application Scenarios】	Healthcare
【Technical Principles and Project Introduction】	
Hemodialysis patients depend on machines to remove excess fluid and waste from their bodies, typically three times per week. At each session, it is critical to accurately estimate the fluid volume to be removed and the optimal removal rate to prevent side effects such as fainting, cramps, or heart failure. However, around 97% of dialysis machines are legacy systems that lack this capability, reducing treatment effectiveness and increasing reliance on highly experienced medical staff. This inefficiency drives up costs—about \$100,000 per patient annually and roughly \$240 billion globally—and continues to grow. To address this, we have developed an AI-powered hardware and software module with integrated system architecture. By combining machine learning, expert fuzzy logic, (IoT) sensors, and advanced Huawei technologies, our solution improves the safety, accuracy, and efficiency of dialysis treatments, enabling scalable solution with safe collaboration between hospitals.	
【Project Value】	
Our smart dialysis solution enables intelligent fluid management in legacy machines, extending advanced care to even the most sensitive patients—including children. It offers AI-driven functionality comparable to high-end dialysis systems but at 50–70% lower cost. The system also automates documentation, easing the workload for medical staff, and reduces the need for highly specialized nurses, as general nursing personnel can operate it with minimal training. With strategic partnerships, especially with Chinese dialysis machine manufacturers, we project up to \$1 billion in global revenue over five years.	



Showcasing students achievements on a Global platform

Huawei ICT Competition Global Grand Prize Winning Team from Serbia

In support of
Global Education Coalition
launched by UNESCO



- 1 TV Show – Serbia
- 60+ Articles & Posts

AI

Huawei ICT Competition: Unlocking AI-Powered Innovation in Healthcare

By Guest@HuaweiBlog

Jul 11, 2025

A guest post from the University of Kragujevac Huawei ICT Competition team, Grand Prize Winners of the Innovation Competition for their solution: Enhanced Optimization of Fluid Volume Control in Hemodialysis Using Federated Learning.

There is no simple way to describe the unique travel experience of our team from the [Faculty of Technical Sciences in Čačak, University of Kragujevac](#).

Our goal was to participate in the global [Huawei ICT Competition](#).

The idea that brought us here is the result of our university's cooperation with the [University Children's Clinic in Tiršova](#). Collaborators from the clinic set us a big challenge: how to make the hemodialysis process simpler, more efficient and less dependent on the immediate experience of the doctor?

<https://blog.huawei.com/en/post/2025/7/11/huawei-ict-competition-winners-ai-innovation-healthcare>

Why Precise Dialysis Matters – Meet Emma



Emma
8 years old
25 kg - 1,25 L/session

- Dialysis 3 times a week

- The human body is made up of about **65% water** (7 to 10% — is within the bloodstream) and we can safely remove only **up to 5%** of her body weight in fluid — about **1.25 liters**.
- We need to accurately estimate fluid overload: **how much to remove**
- But it's not just about how much we remove — it's **how fast we do it**.

Why Ultrafiltration Rate (UFR) is Critical

- Too fast → Hypotension, cramps, cardiac risk
- Too slow → Fluid overload, heart strain, extra sessions
- Needs **continuous, gentle adjustment**
- More complex in children and patients with high BMI. Getting this wrong is dangerous !

- High BMI ≠ more water – fat holds little water
- Muscle = high water content



We came up with the idea of developing an application that uses machine learning and artificial intelligence methods to determine the optimal amount of fluid that needs to be removed during hemodialysis, as well as the optimal speed at which the process is carried out, based on the patient's data and his or her parameters during hemodialysis.

Highlights – Top Media coverage



Quality of Students Projects

Example 2

OUR TEAM



Developer

Ulaş UÇAN

Computer Engineering
Student



Researcher

Eylül Ece BAK

Management Information
Systems Student



Developer

Gizem CAN

Computer Engineering
Student



Team Instructor

Yusuf Seyit ÖZDEMİR

Genc Academy
Ministry of Youth and Sports



Together with sign language experts,
we worked with people from
all age groups and signing communities



This way
we aimed to build the best AI model
by learning sign language
from the most reliable sources.

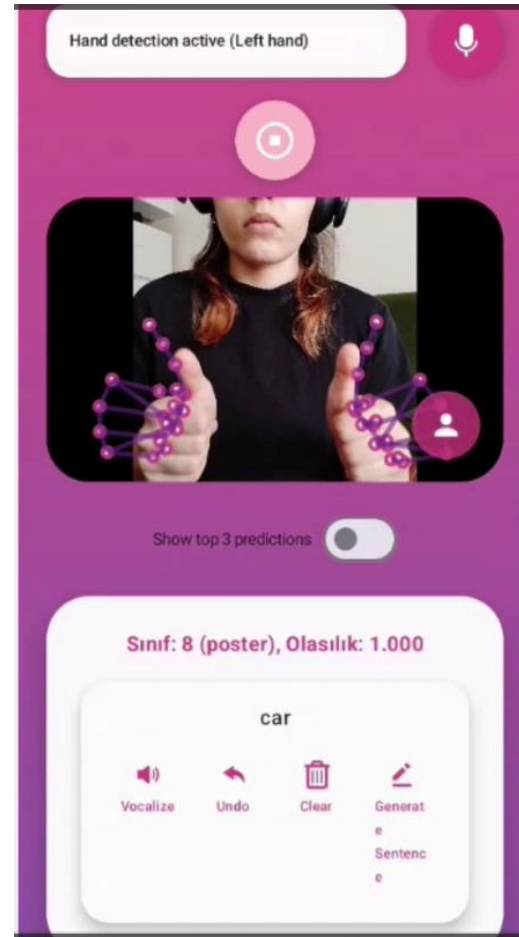
9th Competition **Regional Grand Prize Winners**

GENC Academy, Turkey

Project: Conversign

Regional Grand Prize Winner from Turkey

Deaf and hearing people can finally connect.



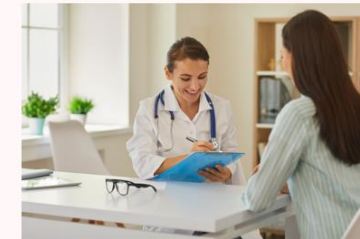
With Conversign

- Sign-language to text and audio
- Text and audio into Sign-language

TARGET AUDIANCE



SCHOOLS



HOSPITAL



PUBLIC INSTITUTIONS



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Global Education Coalition
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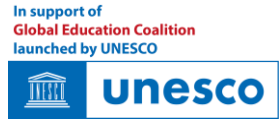
Huawei ICT Competition 2025-2026 Europe



Huawei ICT Competition 2025-2026 Europe



I. C. The Future



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Huawei Talent Ecosystem Promotion Platforms



Huawei Talent

One-stop service
platform



Huawei ICT Academy

WeChat

Latest news and success stories of Huawei ICT Academy



Facebook



Huawei Certification

WeChat

Latest news of Huawei certification



Facebook

Thank you.



Bring digital to every person, home and organization for a fully connected, intelligent world.

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