

Al and FMT certification Handbook -LEARNING PATHWAY-





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Introduction

The Al and FMT Certification program for the world was announced on 29 October 2016. Developed by Pool of subject matter experts worldwide, it aims to provide professional recognition to achieve the UN sustainable development and build the international standard and the proper mindset. There are currently (2) main levels of professional qualifications in Al and FMT Certification:

- 1. IAIDL basic (International artificial intelligence and future management tools driving license foundation)
- 2. IAIDL advance Level II (International artificial intelligence and future management tools driving license Practionaire)
- 3. AIMA (Al and FMT maturity assessor)
- 4. Al and FMT expert (IAIDL Expert- Top up with silicon valley)

This handbook provides information how aspiring applicants can attain each level of professional qualifications, including required competencies and experiences, the assessment framework, application process and re-certification and renewal. The assessment framework of AI and FMT Certification are mapped to real-world industry needs through World economic Forum and OECD requirements and its award-winning AI Apprenticeship Program (IAIDL)™.

About IAIDL



IAIDL was established in June 2016 as an American International research and innovation program office focused on harnessing the scientific and economic potential of AI and FMT to boost global competitiveness and correlate it with Global AI index . It does this by directing AI and FMT research and innovation of strategic interest, developing international-level of AI and FMT systems and building AI and FMT talents and capabilities to catalyze industry transformation. IAIDL is funded by International Research organizations and corporates .

What is the IAIDL certification?

IAIDL considered as the first AI and FMT competency-based certification worldwide that is aligned with AI associates standards, and global AI Index. IAIDL Basic (Foundation) is an individual who has been assessed to have the essential technical competencies to understand the AI and FMT applications. In this particular level individuals are able to use their capabilities to build basic AI and FMT models/solutions or applications to address business problems. IAIDL advance (practionaire) and above have also demonstrated their ability to lead a team of AI and FMT to design, develop and deploy multiple AI and FMT projects which unlock and deliver business value. As the demand for skilled AI and FMT grows, AIMA are well positioned to provide the necessary technical and professional knowledge, skills and competencies to manage AI and FMT projects successfully from start to end based on results of AIMA report.

For more information on IAIDL and its programmes and other services,

Please visit https://www.iaidl.org

Why IAIDL?



- The only accredited course based on international best practices that will integrate the AI with FT tools. The Learning Pathway integrated With "silicon Valley USA".
- IAIDL international Objectives aligned with UN Objectives.
- International Membership and association with different AI and FTM associates in the world.
- IAIDL will pave the way to Professionals , Schools , and Everyone to build up a strong career and vibrant ecosystem in Al and Future management tools ; to perform practice-inspired knowledge, develop World class professionals to power integrated Al and future management tools efforts.
- IAIDL is the only international Best Practiced Integrated tool to transformation organization (Lab, Product, Maturity assessment, and Capacity building "training") in the world.
- IAIDL is a program aligned with the best international origin of AI and future tools transformation in the world "silicon Valley".
- IAIDL objectives align with Future shaping objectives for most of the developed countries according to the competitiveness report "to be an anchor International capabilities in AI and future management tools, thereby creating Social and economical impacts, to grow pool of talents, and build Effective Ecosystem to put each country in the growth zone based on AI and future management tools.
- IAIDL is the only Integrated Framework with Excellency Models.

Al career profiling and Competency DNA

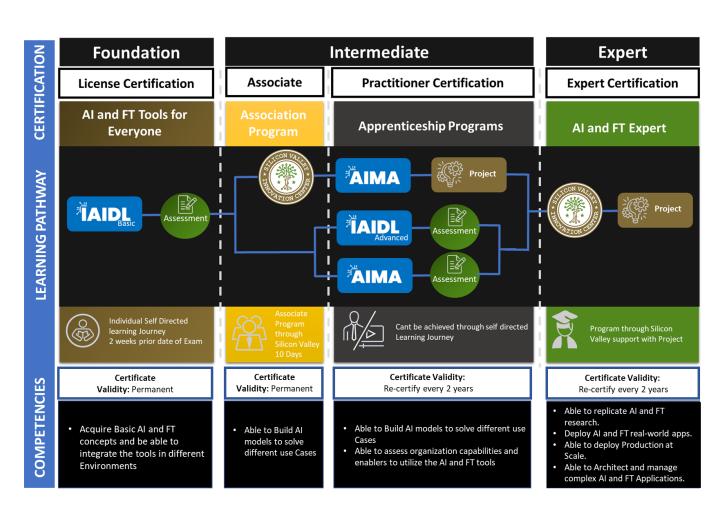
The Main three certification levels for AI and FMT are aligned with the competency requirements of different AI and FMT career profiles and DNA.

Main certificate	Profile	Required competencies
IAIDL basic	Candidates who are deeply interested in understanding Ai and FMT Such as coding/AI/machine learning (ML), fresh graduates, working professionals who employ data analysis techniques in the course of their work	N/A
IAIDL advance	Working professionals with at least one year of experience in Al-related roles. Individuals at this level are typically Al specialists in Al project teams within a commercial organization.	 Python/programming SQL Linear algebra and statistics Exploratory data analysis AI/ML AI ethics, bias and governance. IAIDL Basic
AIMA	Working professionals and seniors with at least three to six years of experience in Al-related roles. leading teams in developing and deploying multiple large-scale and complex Al and FMT projects in a commercial organization. Individuals at this level are typically managers or senior managers and head Al/Technology Centers of Excellence or similar functional units in a large commercial organization who are team leads for large-scale Al and FMT projects in commercial organizations.	Strategic thinking Communication Al and FMT project design, development, management and deployment Thought leadership Al ethics, bias and governance IAIDL Basic



With our learning pathway, you can upskill your knowledge in AI and FMT by the best international practices in this area. Most of these

LEARNING PATHWAY





Foundation

License

Qualifications required:

AI and FT Tools for Everyone

Assessment:

Pass the Basic Level

Competency:

Acquire Basic AI and FT concepts and be able to integrate the tools in different Environments

Validity of Certificate:

Permanent

Intermediate

Associate

Qualifications required:

Pass the basic level of IAIDL

Assessment:

Pass the Manager Level of Silicon Valley

Competency:

Able to Build AI models to solve different use Cases

Validity of Certificate:

Permanent

Practitioner

Qualifications required:

Pass the basic level of IAIDL

Assessment:

Option1: Pass AIMA Assessor and

Advanced Level of IAIDL.

Option2: Pass the Associate, AIMA Assessor supported with a project.

Competency:

- Able to Build AI models to solve different use Cases
- Able to assess organization capabilities and enablers to utilize the AI and FT tools

Validity of Certificate: 1 year

Expert

Expert Cert.

Qualifications required:

Pass the Practitioner level of IAIDL

Assessment:

Pass Director level of Silicon Valley Supported with a Project

Competency:

- Able to replicate Al and FT research.
- Deploy AI and FT realworld apps.
- Able to deploy Production at Scale.
- Able to Architect and manage complex AI and FT Applications.

Validity of Certificate:

2 years



IAIDL

Basic & Advance Level



Module 1: Blockchain

- Distributed electronics ledger that uses software algorithms to record and confirm transactions with reliability and anonymity.
- The record of events is shared between many parties and information once entered cannot be altered, as the downstream chains reinforces upstream transactions
- Build your first smart contract



Module 2: Drones

- Air-or water-base devices and vehicles, for example, Unmanned Aerial Vehicle (UAV), that fly or move without an onboard human pilot.
- Drones can operate autonomously (via onboard computer) on a predefined flights plan or be controlled remotely
- Drive and learn Drone licensing



Module 3: Internet of Things IoT

- Network of objects devices, vehicles, etc. embedded with sensors, software, network connectivity and compute capability, that can collect and exchange data over the internet.
- IoT enables devices to be connected and remotely monitored or controlled.
- Differentiate the difference between IOT and IOO











Module 4: Robots

Electro-mechanical machines or virtual agents that automate, augment or assist human activities, autonomously or according to a set of instructions – often a computer program.



Module 5: 3D Printing

Additional manufacturing techniques used to create three-dimensional objects based on digital models by layering or "printing" successive layers of materials. 3D printing relies on innovative "inks" including plastic, and more recently, glass and wood.



Module 6: Virtual Reality & Augmented Reality

Computer-generated simulation of a threedimensional image or a complete environment, within a defined and contained space, that viewers can interact with in realistic ways.

VR is intended to be an immersive experience and typically requires equipment, most commonly a helmet / headset. Additional of information or visuals to the physical world, via a graphics and / or audio.

Overlay, to improve the user experience for a task or a product.

This "augmentation" of the real world is achieved via supplemental devices that render and display said information

Intensive and Comprehensive competency-based Training Program for anyone who wishes to become fully competent in the use of a AI and future tools. IAIDL modules provide a practical program of up-to-date skills and knowledge areas which are validated by a test



IAIDL Basic & Advance Level

Module 7: Smart Big Data

- Dealing with unstructured and structured data, Data Science is a field that comprises of everything that related to data cleansing, preparation, and analysis.
- Data Science is the combination of statistics, mathematics, programming, problem-solving, capturing data in ingenious ways, the ability to look at things differently, and the activity of cleansing, preparing and aligning the data.
- In simple terms, it is the umbrella of techniques used when trying to extract insights and information from data.
- Big Data humongous volumes of data that cannot be processed effectively with the traditional applications that exist. The processing of Big Data begins with the raw data that isn't aggregated and is most often impossible to store in the memory of a single computer

Module 8: Artificial Intelligence AI

- Software algorithms that are capable of performing tasks that normally requires human intelligence, such as visual perception, speech recognition, decision-making and language translation.
- Al is an "umbrella" concept that is made up of numerous subfields, such as machine learning, which focuses on the development of programs that can teach themselves to learn, understand, reason, plan and act. (i.e. become more intelligent) when expose to new data in the right quantities.

Basic Level : which provide essential knowledge of Al and understand all the related information for our 8 modules.

Advance Level: which provide Advance knowledge and skill of using and Implementing Al with all its supportive Tools.





AIMA

Assessor

IAIDL presents training program on Management Maturity Model for the future management tools that focusses on the fundamental process of data management and a set of leading practices to manage critical assets and implement the same across business lines through AI and FTT.

The course covers well-known concepts that can help with establishing, building, sustaining, and enhancing an effective transformation management across the process life cycle, right from the creation through delivery, maintenance, and archiving to AI modeling and deep learning. It also aims to help individuals plan and execute strategic implementation of AIMA to gain competitive advantage in the market and service government. The Management Maturity Model AIMA training concludes with an objective type assessment, and a certificate shall be awarded to the participants who successfully complete the course and score the required percentage of marks in the exam with dummy case assessment.



Objectives of the AIMA Management Maturity Model course:

- To provide an insight about the importance of management pillars across business lines.
- To focus on the fundamental process of data management and the techniques to strategically analyze data to reach deep learning model in accelerated organization behavior.
- To create a clear picture of the report outcomes by establishing a relationship between the different categories and process areas.
- To help in implementation of leading practices of future tools with the services implementation.

AIMA Model Course outline



An introduction to the AIMA

- Why AIMA?
- AIMA An introduction
- Overview of AIMA categories and process areas
- Overview of the capability and maturity levels of AIMA
- Parts of process areas and excellency model
- Overview of the AIMA structure Model

Strategy and data governance

- Data management strategy
 - Data management strategy
 - Communication
 - Data management function
 - Business case
 - Funding
- Data governance:
 - Governance management
 - Business glossary
 - Metadata management

Data quality and data operations

- Data quality:
 - Data quality strategy
 - Data profiling
 - Data quality assessment

- Data cleansing
- Data operations
- o Data requirement definition
- o Data life cycle management
- o Provider management

Services and tools architecture and supporting processes weighting

- Tools architecture:
 - Architectural approach
 - Architectural standards
 - Data management platforms
 - Data integration
 - Historical data archiving
- Supporting processes:
 - Measurement and analysis
 - Project management
 - Process quality assurance
 - Risk management
 - Configuration management
 - Conclusion

Global AI index and its methodology

- Understiong GAII methodology
- Contribute in the the index
- Undersdtanding index weighting
- Improve your sectorial performance using AIMA and GAII



The purpose of this program is to immerse in Silicon Valley's Artificial Intelligence Industry.

This program agenda is built around **interactive discussions with the senior** executives of top Silicon Valley companies, university professors and investors as well as visits and presentations with innovative startups and product demos.

The program is a chance for participants to gain **experience-based knowledge from** like-minded executives and companies and to learn about the latest trends in disruptive technologies and trends in AI Field.

Our program will **educate the participants in** all major industry trends, **connect you with the** companies pioneering groundbreaking solutions and **inspire you toward action.**.

ARTIFICIAL INTELLIGENCE - REDEFININGINDUSTRIES





PROGRAM HIGHLIGHTS

Keeping up with the pace of change in AI world is no easy task. With hundreds of startups in the sector utilizing the latest technologies, industry disruption can come at any moment. For many people, AI remains unclear on what this technology is all about, so our program defines on how we start the conversation and discuss about it.

The Program Key Learning Topics

- The importance of AI technology: How can AI change the world?
- Unleashing the bold era of IoT & AI innovation.
- Digital Revolution: The New Generation of Digital Technologies and Their Impact on Industries.
- Data Automation and Artificial Intelligence in the Supply Chain.
- Accelerating Sales Growth Through AI.
- Living in the post-Al world.
- Al for Enterprise: Challenges and Solutions from the messy real world.















DAY 1. Welcome to Silicon Valley

Dinner Session

Introduction to Silicon Valley and its ecosystem. Fundamental players of Silicon Valley Ecosystem

Silicon Valley is the world's leading place for innovation and high tech and has a unique ecosystem consisting of capital, world-class universities and industries. You will learn what makes Silicon Valley such a unique place, who are the main players - accelerators, incubators, Venture funds, Angel groups, Corporations and Disruptive startups, Universities and R&D labs.

DAY 2. AI: A World of Applications

Session 1

Al and the Future of Industries

There is a long list of industries where AI is applicable, from compliance and fraud prevention in finance through to geophysical research and field data collection in energy. What's more, within the field of AI, sub-fields such as natural language processing and computer vision present further opportunities for innovation. To explore the full range of disruptive applications of AI this session will take participants on a technology deep dive with a company leading the AI revolution.

Session 2

Automating Insights with AI and Big Data Analytics

All firms today are essentially software companies, consuming vast amounts of data. Helping them do this are the tech startups that have built the next generation of data management platforms. These applications autonomously combine structured and unstructured data, using artificial intelligence to extract insights that can inform both day-to-day management and long-term strategy. To learn more about how this big data analytics is changing the face of industries and where it will lead next, participants will use this session to meet a leading data analytics innovator.

Session 3

Using AI and ML to Power Business Intelligence Platforms

A new wave of cloud-based solutions are seeking to empower companies with real-time business analytics. Through Al-powered platforms, firms can now gain greater transparency over costs, predict events that can hamper business continuity, and make decisions at speed to drive better business outcomes. To learn how these tools will help build the future business landscape, participants in this session will meet a technology leader from the business intelligence sector.

Session 4

Self-Driving Vehicles and Logistics Disruption

The race is on in Silicon Valley to build autonomous mobility. A technology with major implications for the future, self-driving vehicles are set to revolutionize the way we move goods and people. In this session participants meet a company undertaking disruptive work in the market for self-driving in order to learn what the future of logistics looks like when autonomous vehicles become commonplace_{1.5}



DAY 3. Agtech, Real Estate Tech

Session 1

Crop Management with AI and Computer Vision

For farmers, every plant is crucial. Yet the growing incidence of herbicide-tolerant weeds, climate events and crop disease are making it gradually more difficult to maintain healthy fields. But help is at hand from agtech innovators. These companies are using computer vision, artificial intelligence and big data to enable farmers to manage and protect crops at unprecedented levels of granularity. This session will connect participants to the present and future of crop management. They will meet a leading agtech disruptor.

Session 2

Aerial Imagery for Predictive, Proactive Farming

The advances of recent years in the hardware and software for image processing and analysis have found their "killer app" in food and agriculture. Today, using aerial spectral imagery, farmers can identify issues in their fields surrounding disease, water, and fertilizer weeks before they are visible to the naked eye. This technology - powered by artificial intelligence - is already proving disruptive as it opens up new possibilities for precision agriculture. In this session participants will connect to an innovator in aerial imagery as they find out what the technology promises for the future of farming.

Session 3

Redefining Real Estate with Emerging Technologies

A wave of innovative is sweeping the landscape of real estate transactions. The companies leading the charge have brought together real estate professionals, software engineers and user experience experts to build platforms that streamline the process of closing property deals. These digital tools use emerging technologies such as blockchain and machine learning to cut friction out of the transaction process, reduce fraud and facilitate collaboration between parties. In this session participants meet and learn from a company actively transforming real estate transactions.

Session 4

How AI and Predictive Analytics are Disrupting Business Accommodation

The digital transformation of accommodation rental may have started in the tourist travel market but the business travel sector, itself worth billions of dollars, is rapidly catching up. Today we see entrepreneurs building platforms highly customized to the needs of corporates. The innovation these early-stage ventures deploy include AI and predictive analytics to streamline and automate the accommodation booking process. In this session participants will meet and hear from a disruptor in the market for business travel accommodation.



DAY 4. Supply Chain, Logistics & Manufacturing

Session 1

Digital Platforms for Supply Chain Management

The advances of recent years in algorithms, data and artificial intelligence have made their way into logistics and supply chain. A wave of tech companies is taking advantage of these technologies, using them to provide enterprises with innovative new tools for supply chain management and compliance. These platforms enhance visibility and provide predictive insights for all stakeholders. In this session program participants will learn how big data analytics platforms are transforming logistics and supply chain operations. They will meet and hear from a company leading innovation in this sector.

Session 2

Using Robots and Co-bots to Overcome Skills Shortages

Robots that work alongside humans in shared workspaces are a growing part of the connected factory of the future. Already these co-bots are proving to be a viable solution to the skills shortages manufacturers are faced with as a result of the rapid digitization of the workplace. But robotic coworkers can also present challenges, especially if an organization does not have the kind of culture in place that encourages human workers to embrace their artificially intelligent counterparts. In this session participants find out how to navigate this complex terrain and make the right investments that will achieve a profitable balance between human and robotic workers.

Session 3

Reinventing Last-Mile Delivery

Today, waiting times for goods ordered online are often down to a day or, in many cases, a matter of hours. Yet in Silicon Valley disruptive startups continue to work to perfect retail logistics. Using autonomous vehicles and much more, they are defining the future of last-mile delivery. How soon will unmanned vehicles communicate with Al-powered security systems to facilitate package deliveries in an entirely autonomous way? In this session participants will meet a leading last-mile delivery innovator to learn what the future of the sector will bring.

Session 4

Demand Forecasting and Supply Chain Optimization

Advances in technologies such as AI and computer vision have made it possible for enterprises to obtain ever-more accurate predictions of consumer buying behavior. A wave of technologies companies are providing solutions in this area, allowing retailers to react quickly to changes in demand and optimize their supply chains accordingly. In this session participants will learn about the latest advances in demand forecasting. They will meet a company at the forefront of the digital transformation of this area of supply chain operations.













DAY 5. HR and Fintech

Session 1

Disrupting Recruiting With Emerging Technologies

The field of recruitment is experiencing a moment of intense innovation activity. Companies active in this sector are bringing to market novel solutions such as platforms to source, interview and hire candidates, and software powered by deep learning to predict employee career development. Through a meeting with one of the sector's leading companies, this session will educate participants in how these products will impact the future of HR.

Session 2

Automation Across HR

In a growing list of HR sectors that includes recruiting and benefits management, automation is among the fastest moving trends. With the help of technologies such as cloud computing and AI, smart machines and robotic processes are carrying out more and more routine work in order to allow humans to handle more complex tasks. Which sector of HR will automation disrupt next and how will the trend impact HR at the industry-level? We tackle those questions in this session as participants meet a company leading the way in HR innovation.

Session 3

Robo-advisory and the Future of Wealth Management

One of the major trends today in wealth management is robo-advisory. These platforms, often web- or smartphone-based, use algorithms to automate investment decisions, entirely free of human input. Today there are both B2B and B2C variants available in a market expected to be worth trillions of dollars in the coming years. Will robo-advisors come to complete dominante the wealth management landscape? What will the role of traditional human advisors be when trading becomes even more automated? In this session participants will learn answers to those questions and much more as they meet a company leading the way in robo-advisory.

Session 4

Fighting Fraud and Authenticating Identity

As the digitization of investment and wealth management grows, so too do cyber threats. To tackle these risks, a new breed of innovator is combining technologies such as computer vision, machine learning, and biometric facial recognition. These platforms are helping businesses and consumers to authenticate identities, meet compliance regulations, and much more. In this session participants will connect to leader in digital identities and fraud prevention to learn what the future holds for the sector.















DAY 6. Smart Home, Smart Cities

Session 1

The Future of Smart, Sustainable Cities

Driverless taxis, smart streetlights and an abundance of electric car charging points are just a few of the features envisioned for the smart cities of the future. These urban environments will prize sustainability as they seek carbon neutrality through use of renewable energy. A major trend for many years to come, smart cities has major implications for the transportation industry. This session explores those implications and the challenges and opportunities they will give rise to. Participants will gain access to the very latest intelligence as they meet a leading smart cities innovator.

Session 2

Automating Retail with Emerging Technologies

When Amazon Go launched just a few years ago, it was hailed as a glimpse into the future of retail. Cashless and cashierless, frictionless and automated, the stores addressed customer pain points in a highly effective manner. Today, the Amazon Go network is growing. Does that mean the commerce giant's high-technology model will define the future of physical retail? While that may still be an open question, for a number of companies in Silicon Valley, retail automation is undoubtedly the future. By building software and hardware around technologies such as deep learning, computer vision and artificial intelligence, these enterprises are redefining what it means to shop. This session will connect attendees to one of the innovators, taking them on a deep dive into the future of retail automation.

Session 3

Emerging Technologies for Construction

As our cities become smarter, so too do the construction industry stakeholders that make them. In Silicon Valley this transformation of construction is clear to see, with many companies seeking to disrupt the sector's traditional products and processes through digital platforms and emerging technologies. In this session participants will take a deep dive into the digital transformation of construction with a company leading the field.

Session 4

Where the Smart Home Meets Insurtech

The smart home trend also extends into how properties are insured, something that is changing rapidly thanks to insurtechs. These innovative companies are leveraging emerging technologies such as AI and ML to offer a data-driven approach that promises to make insurance a predictive, proactive service. In this session attendees will take a deep dive into the future of insurance as they meet one of the companies disrupting the sector.

Al and

It is important that AI and FMT applications be built and used ethically, fairly and responsibly. An IAIDL licensed candidate should always be aware of the principles that underpin this, reflect on the wider impact of his/her work, and consistently support the public good in his/her projects.

The IAIDL framework comply with the international Personal Data protection Acts worldwide and international benchmarked models of for Al and FMT Governance Framework which provides detailed and readilyimplementable guidance for private sector organizations to address key ethical and governance issues when deploying AI and FMT solutions. The model framework seeks to promote public understanding and trust in Al and FMT technologies by explaining how AI and FMT systems work, highlighting good data accountability practices and emphasizing the need for open and transparent communication, IAIDL helps organizations to align their AI and FMT governance practices with the international model framework. It also provides industry use cases and best practices to support organizations in the implementation of the framework. When developing and deploying AI and FMT solutions, Ai and FMT certification should strive to adhere to the guidelines provided in the International AI and FMT Governance Framework (or any equivalent AI ethics and governance framework such as Australia's Ethics Guidelines for Trustworthy AI, Artificial Intelligence and Japan's Social Principles of Human-Centric AI.) All IAIDL candidates will need to understand AI Ethics, Bias and Governance before the certification can be awarded. oxt.active_object is no

DISPLAY OF CREDENTIALS

All certified Candidates will be allowed to display their

certification credentials and the IAIDL certification logo on their business card, email signature and other corporate marketing materials. Any display of the IAIDL certification logo must adhere to the style guide which will be sent to all successful certification candidates once requested from Operation team via Email:

Appeal for AIMA certification

Should a candidate wish to appeal against a certification decision for AIMA project, the reasons for the appeal should be submitted in writing to Accrediation@iaidl.org. If a review of the candidate's assessment is required, an administrative fee will be levied. The fee is \$1000.0 for AIMA assessor. Within 14 days of submitting the administration fee, the appellant will be notified of a review meeting date with the Appeals Review Committee (ARC). The ARC will consist of two senior engineers from IAIDL and external IAIDL Assessor and Accreditation manager who were not involved in the appellant's original assessment. The ARC will review the merits of the appeal together. The results of the appeal will be sent to the appellant within 14 days of the date of the review meeting. All decisions made by the ARC will be final.

Our Alumni are coming From



















































































































ARTIFICIAL INTELLIGENCE SOCIETY OF HONG KONG 香港人工智能協會





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