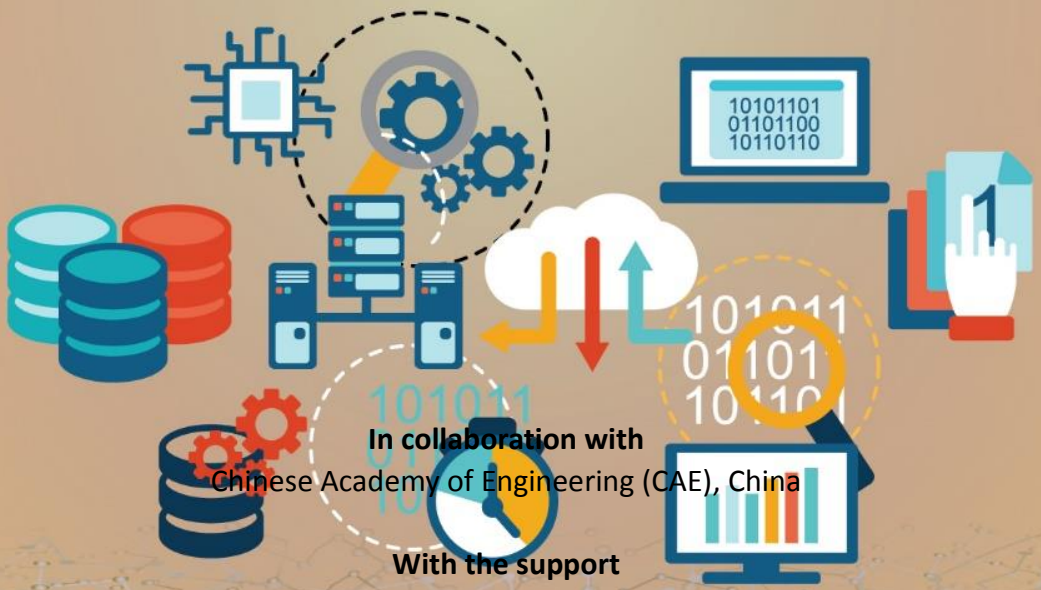
ISTIC
INTERNATIONAL SCIENCE, TECHNOLOGY AND INNOVATION CENTRE FOR SOUTH-SOUTH COOPERATION UNDER THE AUSPICES OF UNESCO

IKCEST
International Knowledge Centre for Engineering Sciences and Technology under the Auspices of UNESCO
联合国教科文组织国际工程科技知识中心

INTERNATIONAL TRAINING WORKSHOP ON BIG DATA TECHNOLOGY APPLICATION FOR DEVELOPING COUNTRIES

12-18 September 2018 | Xi'an, China



In collaboration with
Chinese Academy of Engineering (CAE), China

With the support
Xi'an Jiaotong University, China

BACKGROUND

Industry 4.0

Industry 4.0 (sometimes referred to as the fourth industrial revolution) is basically the next stage in the digitization of the manufacturing sector. The three previous major shifts in manufacturing have been the 1970s lean revolution, outsourcing boom in the '90s and automation in the 2000s. Big data, advanced analytics, artificial intelligence, Internet of Things (IoT), human-machine interfaces and digital to physical transfer (3D printing) are all combining to form the fourth industrial revolution.

Many of these aspects are already in evidence for a lot of businesses but in the coming years are bound to become more prominent. Some will affect the whole supply chain or process while others will only impact a small part. Smart factories will be at the forefront of pushing Industry 4.0 through, making the use of such elements to improve cost-effectiveness and product quality.

In many developing countries, many professionals in government, in industry and serving nongovernmental organizations are challenged by the fast pace of technological change. Science and Technology is without doubt a strategic driver that contributes toward the shift from relatively lower end economic activities into high value added activities.

As such, professionals who understand the dynamics of science and technology within the context of economic and market development, are critical to help in designing blueprints and strategic implementation frameworks to lead strategic transformation within countries and organizations.

Big Data

Day by day more data generated in this new age. How knowledge should be acquired, disseminated and then serve the humans pose a new challenge. Mass data distributed across all social institutions feature different backgrounds, structures and constant growth. They are all there, but the professional in STI cannot make full use of them, due to the lack of interconnection among them. Big Data platform provides a potential solution to collect data resources, to integrate science and technology forces and to strengthen academic exchanges and collaboration to address this challenge.

Relevant data is necessary not only in providing required and timely information for efficient planning but also for monitoring. Within the context of the UN Sustainable Goals, big data can be utilised to get relevant high quality information with greater detail as it supports the integration of data from new technologies with traditional data.

With this in mind, ISTIC and IKCEST are committed in ensuring developing countries are not left behind in the pursuit of economic development impeded by the absence of a technological capability to harness new opportunities, that will generate income, jobs and revenue for countries. The Big Data Application in engineering, science and technology provides a potential solution that can enhance/advance the decision making and problem solving in STI into higher level.

5 Advantages of Big Data:

i. Innovating new business, models, products and services
ii. Creating transparency in organizational activities that can be used to increase efficiency
iii. Enabling more thorough analysis of employee and systems performance in ways that allow experiments and feedback
iv. Segmenting populations in order to customize actions
v. Replacing/supporting human decision making with automated algorithms

OBJECTIVE

The main objective of training programme is to provide the necessary knowledge and skills to participants in the national level ICT related organisation to support STI agenda through the establishment of systematic knowledge management with Big Data Technology Application.

PROGRAMME CONTENT

What Will Participants Get from This Programme?

Participants in this programme will be actively involved in:

- Learning key principles related to Big Data Application and Knowledge Management
- Acquiring key competencies in:
  - Big Data infrastructures
  - Big Data frameworks, best practices and programming language
  - Technology Management Best Practices in establishing the Big Data system.
  - Understanding the technology related to Big Data such as Map Reduce, Deep Learning, Deep Search, Knowledge Graph Population, Data Analytics etc.

EXPECTED OUTCOMES

The outcomes of the training programme are:

i) All participants will gain the necessary knowledge and experience on how to establish big data system for STI knowledge management strategies for their countries/organisations.
ii) The establishment of networking among and between participants from the various countries in the Developing Countries.
iii) Participants trained from the workshop can provide training and leadership on Big Data system formulation to other possible audience from their own organisations/countries.

PARTICIPANTS

About 30 international participants from developing countries and China are expected to participate in this programme. The combination of participants from other developing countries and China will allow for exchange of knowledge, ideas and experiences as well as opportunities for networking and collaboration.

Participants

The organiser will bear the local cost **(accommodation, meals and related transportation within Xi'an).** Participants are required to **seek travel grant from their organisation to pay their travel expenses to Xi'an, China.**

Criteria of participants

The participants should possess the following criteria:

- Those who have Diploma, Bachelor's Degree, Master or PhD in science related to ICT are preferred.
- Have experience or have been involved in the development and implementation of ICT policy in their home countries.
- Participants who perform management functions in the middle and upper level of a government organization are preferred.
- Participants must have good command of English, both in verbal and writing.
- Participants must be in good health.

TIME AND VENUE

The training workshop will be held for 7 days at Xi'an Jiaotong University in Xi'an, China on September 12-18, 2018.

SPEAKERS

The organiser of the training workshop will invite experienced experts and specialists from Xi'an Jiaotong University and the research and platform development teams of IKCEST.

Upon completion of training workshop and the presentation, participants will be awarded a certificate issued by the organiser.

MODES OF DELIVERY

The training workshop will be conducted in English.
The training programme will be delivered by using the combinations of the following methods:

- Series of lectures.
- Discussions and presentations.
- Study visit to selected local organisations.

APPLICATION

Applicants are urged to use online application. The link of online application form can be accessed from the website www.istic-unesco.org and www.ikcest.org

Online application form
https://goo.gl/forms/xkaf7V3ucVQ4KcTg2

CLOSING DATE OF APPLICATIONS

All applications should be submitted to the ISTIC secretariat office **before 30 July 2018.** The organiser will inform the successful applicants to the training programme **not later than 15 August 2018.** Applicants who do not receive word within this date are consider unsuccessful.

GENERAL INFORMATION

Visa Application

Participant from the countries that required visa to China should get it before leaving home. To apply for visas, participants will be requested by the Chinese Embassy or High Commission to submit a letter of invitation. The organiser will send an invitation letter as soon as possible to each accepted overseas applicant.

Computer requirement

Each participant is expected to bring with him/her a computer (laptop/tablet) for the study and presentation preparation and communication during the course.

Contact information

For further information, please contact the Secretariat:

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International Science, Technology and Innovation Centre for South-South Cooperation under the auspices of UNESCO (ISTIC)

Ms. Ma Yingchen
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International Knowledge Centre for Engineering, Science and Technology under the auspices of UNESCO (IKCEST)

TENTATIVE PROGRAMME

	Morning Session 8:30 - 10:00	Morning Session 10:00 - 11:30	11:30 - 14:30	Evening Session 14:30 – 17:30	
Day 1 12/9/18 Wednesday	**Opening session & Introduction of IKCEST & ISTIC**	**Trainees Introduction** *Yongchang Hui/ Qinghe Du*	LUNCH / BREAK	**Business Analytics for Big Data** *Xiangyu Chang*	
Day 2 13/9/18 Thursday	**Computational Social Science from Big Behavioral Data Perspective** *Xi Zhao*			**Optimization theory and method for big data analysis** *Fengmin Xu*	
Day 3 14/9/18 Friday	**Big data platform and technical support** *Shusen Yang*			**Data mining** *Deyu MENG*	
Day 4 15/9/18 Saturday	**Data analysis: Organizing, visualizing and modeling** *Yongchang Hui*			**Big data analysis (Hands-on)** *Wenfeng Jing / Yongchang Hui*	
Day 5 16/9/18 Sunday	**Autonomous Driving for Unmanned Ground Vehicle** *Hongbin Sun*			**Novel Computer architecture for Machine Learning and Neuromorphic Computing** *Pengju Ren*	
Day 6 17/9/18 Monday	**The theory and practice on 3D printing & Visit to the 3D molding technology live demonstration** *Xiaoyong Tian*			**Visit to the Shaanxi Museum** *Ying Lei*	
Day 7 18/9/18 Tuesday	**Visit to the Chinasoft** *Qinghe Du*			14:30-16:30 **Homework presentations** *Yongchang Hui/ Qinghe Du*	16:30-17:30 **Closing Ceremony** • Closing Addresses • Presentation of Certificates • Group Photo

ABOUT THE ORGANISER

INTERNATIONAL SCIENCE, TECHNOLOGY AND INNOVATION CENTRE FOR SOUTH-SOUTH COOPERATION UNDER THE AUSPICES OF UNESCO (ISTIC)

The creation of the International Science, Technology and Innovation, Centre for South-South Cooperation under the auspices of UNESCO (ISTIC) is a follow up of the Doha Plan of Action which has been adopted by the head of States and Government of the Group of 77 and China, during the meeting in Doha, Qatar, from 12-16 June 2005 on the occasion of the Second South Summit of the Group of 77. The Summit urged UNESCO to develop and implement a programme for South-South cooperation in science and technology with the objective of facilitating the integration of a developmental approach into national science and technology and innovation policies, capacity building in science and technology through providing policy advice and exchange of experience and best practices, and creating a problem solving network of centres of excellence in developing countries as well as supporting the exchange of students, researchers, scientists and technologists among developing countries. ISTIC will act as an international platform for South-South cooperation in science, technology and innovation and make use of the network of the G77 plus China and the Organization of the Islamic Conference (OIC). The overall goal of ISTIC is to increase the capacity for management of science, technology and innovation throughout developing countries.

CHINESE ACADEMY OF ENGINEERING

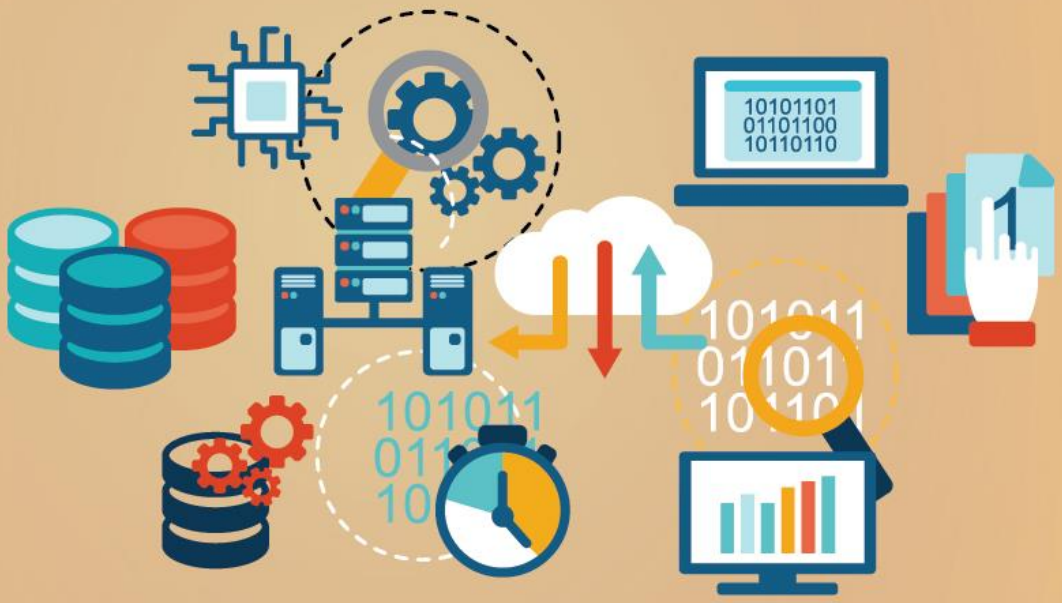
The Chinese Academy of Engineering (CAE) is a national and independent organization composed of elected members with the highest honor in the community of engineering and technological sciences of the nation. Its missions are to initiate and conduct strategic studies, provide consultancy services for decision-making of nation's key issues in engineering and technological sciences and promote the development of the undertaking of engineering and technological sciences in China and devote itself to the benefit and welfare of the society.

INTERNATIONAL KNOWLEDGE CENTRE FOR ENGINEERING SCIENCES AND TECHNOLOGY UNDER THE AUSPICES OF UNESCO (IKCEST)

The International Knowledge Centre for Engineering Sciences and Technology (shortened as “IKCEST”) is a category 2 centre under the auspices of the United Nations Educational, Scientific and Cultural Organization (shortened as “UNESCO”). IKCEST was established on June 2, 2014. The Chinese Academy of Engineering is responsible for the operation and management of the IKCEST.

IKCEST is a comprehensive and international knowledge centre devoted to the engineering sciences, technology and applied technology. IKCEST aims at connecting engineering sciences and technology institutions globally, assembling various digital resources relating to engineering sciences and technology, building up a public data service platform and corresponding service environment, and coordinating the building of various professional knowledge systems, thus providing knowledge-based services at a global scale in the form of consultancies, scientific research and education for policy-makers and engineering science and technology professionals in the world, with particular reference to the developing countries.

The specific tasks and functions of IKCEST are as follows: to establish an international engineering and technology resources hub; to establish a public data service platform, and to develop the technology for mining and analyzing knowledge from big data; to cooperatively build professional knowledge service systems, and to build capacity in developing countries; to foster interdisciplinary engineering talents with big data processing ability; and to assist UNESCO to fulfill its aims and support its action plans.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