

Avinashilingam Institute for Home Science and Higher Education for Women



**AIU – Avinashilingam Institute –
Academic and Administrative Development Centre
(AIU-AI-AADC)**

&

Centre for Machine Learning and Intelligence (CMLI)

&

School of Physical Sciences and Computational Sciences

Jointly organizes

V Short Term Capacity Building Programme for the year 2024

on

Artificial Intelligence Assisted Science Education

15.07.2024 to 19.07.2024

Online!



**Invited Talks
Case Studies
Hands -on Sessions
Activities**



ABOUT THE INSTITUTE



Avinashilingam Institute for Home Science and Higher Education for Women - the epitome of higher education is one of the premier institutions in India well known for its commitment towards the empowerment of women through value based and holistic education. The institute follows educational ideals of Sri Ramakrishna, Holy Mother Sri Saradamani Devi, Swami Vivekananda and Mahatma Gandhiji. The institute is one of the significant contributions of Padma Bhushan, Dr. T. S. Avinashilingam, an illustrious educationist, freedom-fighter and Gandhian and Dr. Rajammal P. Devadas, the world- renowned nutritionist.

The Institute had its humble beginning in the year 1957 as Sri Avinashilingam Home Science College for Women and has been conferred the Deemed to be University by MHRD in 1988. Few of the recent accolades of the Institute includes: A++ with CGPA of 3.65/4 by NAAC; 81st Rank in NIRF, 5th Rank under the category of 'University & Deemed to be University (Govt. & Govt. Aided) Technical' in ARIIA - 2021.

Presently, the institution is progressing towards 'beyond-excellence' under the able guidance and leadership of Dr.T. S. K. Meenakshi Sundaram, Managing Trustee and Chancellor, Dr. V. Bharathi Harishankar, Vice Chancellor and Dr. S. Kowsalya, Registrar.



ABOUT THE ASSOCIATION OF INDIAN UNIVERSITIES

Association of Indian Universities (AIU) is an apex inter university representative body of universities and other higher education institutions in the country. Established in 1925 as the Inter University Board (IUB) of India, it acquired its legal status as a registered society in 1967 under the Societies Registration Act 1860 and was rechristened as Association of Indian Universities (AIU) in 1973. AIU is the second oldest university association in the world next to the Association of Commonwealth Universities which was established in 1913.

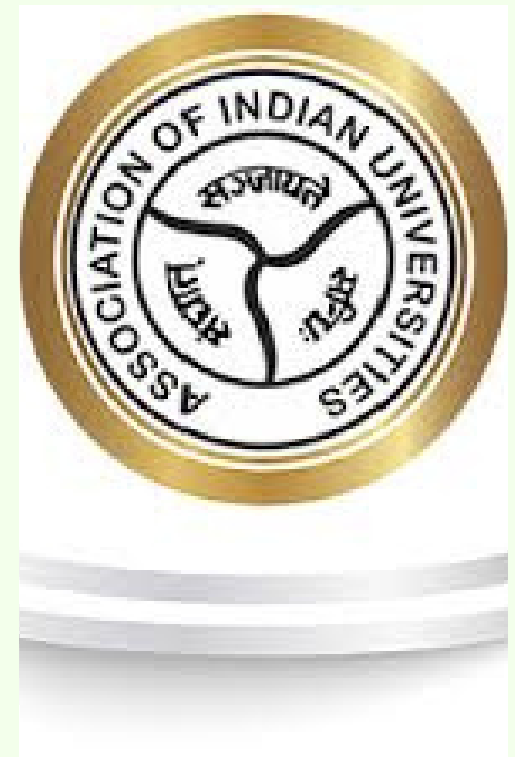
It has the distinct feature of having the largest network of universities and other HEIs under its ambit with 1002 Members which includes 16 Associate Members of Foreign Countries. The membership of AIU includes all types of universities e.g., Conventional Universities, Open Universities, Deemed to be Universities, State Universities, Central Universities, Private Universities and Institutes of National Importance.

In addition to Indian Universities, Universities / Institutes from Bangladesh, Bhutan, Republic of Kazakhstan, Malaysia, Mauritius, Nepal, Thailand, United Arab Emirates and United Kingdom are its Associate Members. Since its inception AIU has played a very significant role in the development of Education in the Country.

Some of the eminent scholars and visionary leaders like Dr Sarvepalli Radhakrishnan, Dr Shyama Prasad Mukherjee, Dr Zakir Hussain, Sir. A L. Mudaliar have given leadership to AIU. During such a long journey, AIU has carved a niche for itself by serving the Ministry of Education, Govt. of India as a research-based policy advisory body. Being an apex institution, it constitutes an integral part of all major decision-making committees and commissions in the country.

As an academic 'think tank' organization, AIU supports the Government as research-based policy advisory body with the wider mandate of taking up research projects on higher education policy and capacity building. It also acts as a bureau of information on higher education; liaise with international bodies and universities for internationalization of Indian higher education among many others. The Vision of AIU is to emerge as a dynamic service and apex advisory organization in India by undertaking initiatives and programmes which could strengthen and popularize Indian higher education as leading-edge system in the world and promote greater national and international collaboration in Higher Education, Research, Extension, Sports, Youth and Cultural Activities.

It is bestowed with the mission of promoting and representing the Indian Universities and other higher education institutions through strong liaison with the government and National/International organizations, sister associations world over and establish liaison between/among universities through active support, cooperation and coordination among the member universities and all its stakeholders for quality education, research and other academics and extension activities.





VISION

To facilitate value-based transition towards changing higher education ecosystem through continuous capacity building.



MISSION

To impart ICT enabled training to human resources of higher education institutions thereby preparing themselves towards Education 5.0.

ABOUT THE CENTRE

AIU-Avinashilingam Institute - Academic and Administrative Development Centre (AIU-AI-AADC) has been initiated by the institute in association with Association of Indian Universities (AIU) as a step towards training the human resources of higher education institutions. The specific objectives of the centre are:

- Facilitate learning through Performance Improvement Programmes for different groups (Administrators/Teaching Faculty/Non-Teaching Research Scholars/Technical Personnel) towards progression based on their career stages.
- Enable continuous learning through rigorous need-based training sessions
- Sensitize stakeholders on recent developments in higher education system in the country and across the world.
- Equip academic / administrative / technical / information personnel with the requisite skills on ICT to handle their work effectively.
- Develop integrity and professional ethics among higher education personnel.
- Strengthen the human capital of the country with right attitude, skills, and knowledge.

VISION



ABOUT THE PROGRAMME

- Artificial Intelligence (AI) significantly enhances education by offering personalized, efficient, and engaging learning experiences. In science education, AI's impact is transformative, addressing students' difficulties with scientific concepts and improving their understanding of how science works. AI-powered platforms provide personalized learning, interactive content, intelligent tutoring systems, enhanced assessment tools, and data-driven insights for educators. Integration with Augmented Reality (AR) and Virtual Reality (VR) creates immersive experiences, aiding comprehension of complex scientific concepts through enhanced visualization.



- University science education must introduce AI tools for solving scientific problems and encourage students to contemplate AI's impact on science. Embracing AI in teaching can foster 21st-century skills, essential for future generations. AI-incorporated teaching methods support participative learning, experiential learning, and problem-solving strategies, creating effective, student-centric education.

- Faculty development is crucial for implementing AI in teaching and assessment. Familiarizing educators with AI-powered platforms tailored for science education enhances personalized learning, interactive simulations, and advanced teaching tools.



- AI-powered feedback tools improve learning outcomes, and AI-assisted content creation, curation, and lesson planning advance STEM education. Leveraging AI to create engaging, personalized, and effective learning experiences is essential for fully understanding scientific concepts and preparing students for future challenges.



OBJECTIVES

Your paragraph text

- To provide an overview of AI in STEM education and its advantages.
- To provide an exposure to AI applications in Physical Sciences.
- To gain valuable insights and practical skills to effectively integrate AI in teaching and research in the physical sciences and computational sciences.

TARGET PARTICIPANTS

College teachers in Physics, Chemistry, Materials Science, Environmental Science, Computer Science and related fields.

Duration : 15.07.24 to 19.07.24

(5 Days Programme)

Time : 9:30 am to 4:45 pm

Note : E-certificates will be issued upon successful completion of programs, with attendance, feedback, and assessment submissions being mandatory.

PROGRAMME SCHEDULE

Day 1: Date: 15.07.2024

Introduction to AI and Machine Learning

- **Overview of AI and its relevance to Physical Sciences**
- **Significance of Machine learning tools and languages in AI-powered education**
- **Deep Learning and Pattern Recognition**
- **Relevance of Data collection methods in Physical Sciences**

Day 2: Date: 16.07.2024

AI-Powered Advanced Teaching Tools to Enhance Science Education

- **AI-powered platforms for personalized learning**
- **AI powered interactive simulations in physical sciences**
- **Intelligent tutoring systems (ITS) and Virtual Teaching Assistants**
- **Virtual Reality and Augmented Reality Tools for Immersive Learning Experience in Science**

Day 3: Date: 17.07.2024

AI in Content Creation and Curation

- **Content creation tools - educational content writing, reporting, story-telling and creative writing, lesson plans and quizzes, Significance of AI in content curation**
- **Multimedia content creation - Video and Audio Production, Image and Graphic Design**
- **'AI and Physical Sciences - The Interface'- Case studies: AI in astrophysics, materials science, climate science, chemistry, satellite data analysis, storm prediction**
- **Hands-on Training**

Day 4: Date: 18.07.2024

AI-Driven Feedback and Assessment Tools

- **AI-Powered Feedback Tools for language, grammar and plagiarism**
- **AI assisted Tools for formulating questions and quizzes**
- **Enhanced Assessment Tools - automated grading, detailed analytics, multi-format support and continuous assessment Formative Assessments Tools for real time feedback and adaptive learning**
- **Hands-on experience in creating assignments and quizzes**

Day 5: Date: 19.07.2024

Practical Implementation and Integration

- **Integrating AI into physical sciences curriculum**
- **Developing AI-based lab exercises and projects**
- **Designing a course module incorporating AI in physical sciences**
- **Concluding session 'Leveraging AI for enhanced learning' Feedback**

LIST OF RESOURCE PERSONS

- **Dr. T.Devi, Dean - Research, PSG Tech - IIM, Coimbatore.**
- **Dr. Punithavalli, Professor and Head, Dept. of Computer Applications, Bharathiar University, Coimbatore.**
- **Dr. Manoranjan Paul, Professor, School of Computing & Mathematics, Charles Sturt University, Australia.**
- **Prof. Thomas Hanne, Head of Competence Center Systems Engineering, University of Applied Sciences and Arts, Switzerland.**
- **Prof. Maiga Chang, Athabasca University, Canada.**
- **Prof. Abdelkrim Haqiq, Faculty of Sciences and Techniques, Hassan 1st University, Morocco.**
- **Prof. Peter Burselovsky, PAWS Lab, University of Pittsburgh, USA.**

- **Mr. Roshan Singh, Founder, Scrollwell, Noida.**
- **Dr. Manoranjan Paul, Professor, School of Computing & Mathematics, Charles Sturt University, Australia.**
- **Prof. Siba K. Udgata, School of Computer and Information Sciences, University of Hyderabad Telangana.**
- **Dr. Suresh Shanmugasundaram, Lecturer, University of Wales, Trinity UK.**
- **Mr. Roshan Singh, Founder - Scrollwell, Noida.**
- **Prof. Anand Paul, Kyungpook University, South Korea.**
- **Mr. Vedha Viyas, ADRA AI Studio, Coimbatore.**
- **Dr. K.Thiyagu, Assistant Professor, Department of Education, Central University of Kerala, Kasaragod.**



REGISTRATION

REGISTRATION LINK :

<https://forms.gle/jXsBGrm9if1afjJD9>



REGISTRATION FEE

- Indian Participants Rs. 750
- International Participants USD 25

PAYMENT DETAILS

BANK ACCOUNT DETAILS

Account Name : Avinashilingam Institute for Home Science and Higher Education for Women

Name of the Bank : Indian Bank

Bank Account Number : 6010310202

IFSC Code : IDIB000A005

SWIFT Code : IDIBINBBCBE

AI ADVISORS

Dr. T. S. K. MEENAKSHISUNDARAM, Managing Trustee & Chancellor

Dr. V. BHARATHI HARISHANKAR, Vice Chancellor

Dr. H. Indu, Registrar i/c

AIU ADVISORS

Dr. PANKAJ MITTAL, Secretary General, AIU

Dr. AMARENDRA PANI, Joint Director & Head, Research Division, AIU

PROGRAMME COORDINATORS

Dr. SHUBASHINI K. SRIPATHI

Deputy Dean-School of Physical Sciences and Computational Sciences

Professor, Department of Chemistry

Avinashilingam Institute for Home Science and Higher Education for Women

e-mail ID: subhashiniksripathi_chem@avinuty.ac.in

Mobile :9842267798

Dr. P. SUBASHINI

Coordinator, Centre for Machine Learning and Intelligence

Professor of Computer Science

Avinashilingam Institute for Home Science and Higher Education for Women

e-mail ID: subashini_cs@avinuty.ac.in

Mobile : 9442271971

REACH US AT

Dr. K. RAMYA

Nodal Officer

AIU - Avinashilingam Institute- Academic & Administrative Development Centre (AIU-AI-AADC)

Avinashilingam Institute for Home Science and Higher Education for Women
Coimbatore – 641 043, Tamil Nadu, India.

e-mail ID : aadc@avinuty.ac.in

Mobile : 8072202927