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Programme 4 Short Term capacity Building
Programme on **"Artificial Intelligence in Education "**

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The fourth Short-Term Capacity-Building Programme was organised by AIU-AI-AADC (Association of Indian Universities - Avinashilingam Institute - Academic & Administrative Development Centre) jointly with Centre for Machine Learning and Intelligence (CMLI) on the title 'Artificial Intelligence in Education' from 19th June to 30th June 2023. The programme aimed to enhance participants' knowledge and expertise in leveraging AI for educational advancements, fostering collaborative learning, and facilitating innovative teaching methodologies. 45 participants from various higher education institutions (HEIs) including few international participants attended the programme in online mode.

The inauguration commenced with a cordial welcome by the Nodal Officer of AIU-AI-AADC Dr.K.Ramya, who elucidated the center's objectives and its historical activities. Subsequently, Dr. P. Subashini, the Coordinator of CMLI, expounded on the program's objectives and execution. A succinct overview of the 10-day itinerary, encompassing themes and distinguished resource persons, was presented.

Dr. Bharathi HariShankar, the esteemed Vice Chancellor, delivered her keynote address, underscoring AI's pivotal role in the pedagogical sphere. Drawing from everyday scenarios, she accentuated AI's potential to create immersive educational experiences and effectively cater to a diverse global audience, transcending geographical boundaries.

Dr. Basheerhamad Shadrach, Director of the Commonwealth Education Media Centre for Asia, delivered an encompassing address during the inauguration. He discussed AI's stages, frameworks, and foundations, including machine learning. The session highlighted AI's educational paradigms, global growth, and applications, emphasizing personalized learning, automation, and skill development for future employability, underscoring AI's transformative potential in education.

Dr. S. P. Thyagarajan, Former Chancellor of Avinashilingam Institute, led a session on the confluence of National Education Policy (NEP) and technology. NEP emphasizes holistic education with AI integration to nurture skills for evolving industries. Institutions must drive industry-aligned research and experiential learning. Technology Enhanced Learning (TEL) with tools like computer-assisted learning, mobile apps, and VR was central. The session highlighted initiatives addressing online education, equitable tech access, and blended learning. Multidisciplinary education and tech integration were stressed. NEAT, leveraging AI for personalized learning, and PARAKH for holistic student assessment were introduced. The session encapsulated NEP-aligned holistic tech-driven education.

The ensuing session encompassed an engaging activity wherein participants engaged in a pre-assessment exercise comprising of Multiple-Choice Questions centered around the domain of Artificial Intelligence. The data collection process was facilitated via Google Forms, with the primary objective of gauging participants' preliminary comprehension of the subject matter slated for discussion throughout the program.

Dr. K. Murugan, former registrar at Tamil Nadu Open University, spoke about how AI can be used in e-learning. He discussed things like ChatGPT and Content Curation that make learning personal and resources easier to access. He also talked about smart tutoring systems that adjust to how you learn and use data to help design lessons. He explained machine learning types like supervised, unsupervised, and reinforcement learning, which build smart AI systems. He said that while AI is great, it's tough because sometimes there's not enough data or the systems get too big. AI can give feedback quickly and make learning fun, but we need to watch out for privacy, fairness, and cost issues.

Prof. Aleksander Petrovic, Vice President and Faculty of Philology at the University of Belgrade talked about how AI can help in education. He focused on making students think critically and do research that helps industries. While AI can help bridge the gap between theory and real-life skills,

Petrovic said we need to be careful about its biases and not believe everything it promises. He also said that education should be fair and true, and we should be careful with technology. The talk looked at how AI affects what we think and learn, mentioning a group of AI-using priests in Germany. They discussed how AI is used in different areas like science, health, and entertainment. Petrovic said we need to use AI in a good and respectful way for everyone's learning, to make the world better.

The activity session was co-ordianted by Dr. P. Subashini, Programme Co-ordinator and Ms. Jennyfer Susan, Ph.D. Research Scholar in the Department of Computer Science. Various AI-supported tools were demonstrated during the session. PDFGear Chatbot is an open-source tool that summarizes content from uploaded PDF files, making it easier to extract information from large documents such as books, research papers, and legal contracts. It offers features like PDF conversion, merging, annotation, editing, splitting, OCR, reading, and compression, providing users with an enhanced PDF experience.

During the session, they discussed about AI tools like ChatGPT that can chat like a person and answer questions. There are also models called DALL-E and DALL-E 2 that make pictures based on what you write. They also mentioned Tome, an AI tool for making slides in presentations. Their session highlighted how AI can help in many ways, like making learning easier by summarizing things, talking like a person, and creating pictures. AI is getting better and is going to change how we learn in exciting ways.

Dr. T.T. Dhivyaprabha, a Research Associate of Avinashilingam Institute highlighted AI's role in education. Personalized learning tailors content to individual interests; automated grading provides quick feedback. ChatGPT assists students, Intelligent Tutoring Systems offer support, and Learning Analytics spot trends. Adaptive Assessments adapt tasks to student abilities. AI aids content creation, encouraging critical thinking. Dr. Dhivyaprabha presented University of Sydney case studies, including tools like Integrity-Bot, STACI, and AI Invoice Processor, showcasing successful AI integration across diverse fields.

Dr. V. Bharathi Harishankar, the Vice Chancellor of Avinashilingam Institute for Home Science and Higher Education for Women, led an informative session on how technology fits into education. She discussed how technology helps teachers access resources, plan courses, and manage tasks. She also talked about personalized learning platforms and simulations that make learning more inclusive. The benefits of AI in teaching and learning were explored, along with challenges like costs and AI's limits. The talk highlighted AI's potential to improve collaboration, customization, and predictive analytics. Dr. Harishankar explained how AI works with different teaching methods and settings. The session also mentioned using technology like immersive experiences, games, and wearables to engage students, but noted that real-time interaction is still important for effective learning.

Dr. Janani, a Research Associate at Avinashilingam Institute presented a session on Canva, a potent design tool. Canva offers diverse features like text effects, shadows, frames, and graphics, aiding easy idea implementation. The Canva toolkit accelerates design creation with efficiency, including video editing through trimming and enhancement for images. Canva's extensive element range spans lines, shapes, graphics, text, audio, emojis, and more, ensuring design versatility. The platform houses tools like cropping, filters, and folders for streamlined customization. Adding background music, audio filters, and PDF conversion enhances its utility. Dr. Janani's session showcased Canva's richness, facilitating professional design with ease.

Dr. J. Jayapriya, from Christ University in Bengaluru, delivered an enlightening talk about Artificial Intelligence (AI), focusing on its applications in computer systems like chess. The session demonstrated how AI algorithms play chess like humans, meticulously considering moves and their probabilities. The basics of AI were covered, explaining Narrow AI (task-specific) and General AI (human-like intelligence), along with Machine Learning and Deep Learning techniques. These methods help AI learn from data, identify patterns, and improve over time.

Real-world AI applications, such as voice assistants, image recognition, and self-driving cars, were discussed, showcasing how AI aids in decision-making and data analysis.

The session concluded by discussing AI's future growth and impact across various industries. The audience also had the opportunity to play chess against an AI, gaining firsthand experience of its capabilities.

In the subsequent session, led by Dr. J. Jayapriya from Christ University in Bengaluru, various open-source AI tools were introduced to enhance education. These tools promote personalized and interactive learning, encouraging creative teaching methods. The discussed tools encompass tasks like creating captivating presentations, evaluating student skills, condensing text, accessing datasets for machine learning, generating research papers, rephrasing content, and downloading research papers. The session emphasized how these tools benefit education, research, and content development.

Dr. J. Jayapriya from Christ University presented advanced research tools in an AI for Academic Research session. Tools like ResearchRabbit.ai, Elicit.org, Unriddle.ai, ChatPDF, and Glasp were highlighted. Participants explored these tools, understanding their practicality for professional contexts. The session emphasized their significance and potential in academic research and collaboration.

Dr. Beto Lucena from the Centre for Extended Learning team at the University of Waterloo introduced a GPT-powered ChatBot designed to aid instructors and students across education. The ChatBot assists with queries, explanations, and guidance on diverse topics. Instructors find it valuable for developing course materials, grading, and offering feedback. It offers personalized recommendations for students, including study materials and research papers. The ChatBot supports homework, projects, study strategies, and language enhancement for non-native English speakers. It aids exam preparation and stress management. While it's a significant resource, its real-time data access is limited, encouraging reliance on instructors for tailored guidance. Overall, the session demonstrated the ChatBot's potential to enhance learning experiences for instructors and students.

Dr. P. Subashini, Programme Coordinator, and Ms. Mohana, Ph.D. Research Scholar, of Avinashilingam Institute demonstrated the practical uses of ChatGPT for both educators and learners.. They highlighted how ChatGPT enriches curriculum design, streamlining lesson planning by providing vocabulary, resources, and grammar assistance. It caters to diverse teaching needs, including worksheets, assignments, quizzes, and more. The session also explored ChatGPT's role in crafting engaging presentations through AI collaboration with the Tome app, offering content generation, color selection, and media integration. Its potential for personalized learning, immediate feedback, and inclusivity were underscored.

For educators, ChatGPT assists in lesson planning, offering materials, addressing student queries, and suggesting tailored resources. It supports language practice, collaborative learning, professional development, and creative writing. From the learner's perspective, ChatGPT serves as a versatile resource. It aids in homework, offers language practice, research guidance, and writing assistance. Learners benefit from personalized learning through inputting their preferences, receiving tailored recommendations, and honing their skills.

Under the guidance of Ms. Gayathri Shri from Scopik Edutech Ltd, Chennai, diverse facets of Augmented Reality (AR) were explored. These encompassed the integration of digital elements into reality through holographic technology, showcased in applications like face AR try-ons and 3D models. Lens Studio's features, such as scripting and animation, were extensively discussed, along with the utilization of 360-degree portals for interactive experiences. The sessions also highlighted AR's educational potential, including speech recognition and text-to-speech functions. Furthermore, the incorporation of Voice UI and machine learning-driven object detection in Lens Studio was demonstrated, expanding AR's creative boundaries. Collectively, the sessions provided a comprehensive grasp of AR's capabilities for dynamic content creation.

In the session led by Dr. Vivekanandan Suresh Kumar, Associate Dean at Athabasca University, the discussion revolved around the limitations of traditional educational assessments and the benefits of embracing non-traditional approaches and AI-based evaluations. Traditional assessments like norm-referenced exams were critiqued for lacking comprehensive understanding and hindering active learning. Non-traditional methods, such as portfolios and projects, were highlighted for promoting engagement and critical thinking. AI-based assessments, utilizing technologies like GPT, were touted as transformative tools that provide insights, detect plagiarism, and assess teaching effectiveness. Ethical considerations regarding student data usage in AI assessments were also stressed.

During the session led by Dr. P. Subashini, Professor of Computer Science at Avinashilingam Institute, the imperative for responsible AI was extensively discussed. Key points included the risks tied to AI systems, the necessity for understanding their functioning, and addressing privacy and security concerns. Emphasizing principles like safety, transparency, and equality, the session underscored accountability, societal considerations, and potential impacts on jobs in the realm of AI deployment.

Dr. T.T. Dhivyaprabha, a Research Associate at Avinashilingam Institute presented a session on Crowdsourcing in Education. This approach involves outsourcing tasks to a diverse network through an open call, benefiting digital learning platforms. Case studies were explored, illustrating how crowdsourcing democratizes content creation, personalizes learning, and encourages collaboration. While offering substantial potential, ethical considerations were highlighted to ensure user well-being. Crowdsourcing is reshaping education by providing high-quality resources globally and holds promise for the future of learning.

Dr. P. Subashini from Avinashilingam Institute led the subsequent session on Mulsemedia in Education. Mulsemedia involves engaging multiple senses in the human experience, spanning virtual reality, arts, games, gastronomy, and more. This intriguing field offers immersive opportunities, but challenges like technology limitations and ethics must be addressed. Mulsemedia can transform how we interact with technology and the world around us through innovative sensory integration.

Prof. Anand Paul from Kyungpook National University discussed the integration of AI in education to enhance student success through personalized experiences and data-driven insights. The session covered strategies like adaptive assessments, predictive analytics, intelligent tutoring systems, and collaborative learning. The speaker emphasized that AI in learning analytics offers a comprehensive approach to improving student outcomes.

Dr. Vinay from Christ University, Bengaluru, conducted a session on digital transformation and its impact on various sectors. The talk covered the fourth industrial revolution, Artificial Intelligence (AI), Big Data, and the concept of the metaverse. The rise of the gig economy was discussed, and future applications of AI in sectors like healthcare, education, and government were highlighted. Google Bard, an AI-based service for automating tasks, was introduced. The session concluded by emphasizing how digital transformation reshapes business processes, cultures, and customer experiences to meet evolving market demands.

Prof. George Ghinea from Brunel University, London, discussed the impact of multimedia and mulsemedia on education. The session highlighted their role in enhancing learning experiences, accessibility, interactivity, and personalized learning. Benefits included enriched learning experiences through various media, fostering interactive and critical thinking skills, AI-driven adaptive instruction, global collaboration, and novel assessment methods.

Dr. Vinay from Christ University, Bengaluru, led a session on Digital AI Tools and Techniques for Teaching and Learning. The talk explored how technological advancements and AI are transforming creative expression, productivity, and communication. The session covered various

cutting-edge platforms like AutoDraw, Quick, Draw!, Google Workspace, and Grammarly, showcasing how AI enhances drawing, writing, and editing experiences. The presenter highlighted how AI-powered tools are becoming integral in everyday tasks and interactions.

Dr. R. Karthikeyan from NGP College, Coimbatore, Delivered a session on AI for Educators. Demonstrating tools like Kahoot, Quizizz, and Mentimeter, the talk showcased AI's role in enhancing instructional design and engagement. Emphasis was placed on motivation, sustainability, and community engagement. Educators were encouraged to integrate AI tools while fostering collaboration and sustainability education.

Dr. Vinay from Christ University, Bengaluru, conducted an interactive session on Digital AI tools and Techniques for Teaching and Learning. The hands-on exploration included tools like Coggle for mindmaps, Tome for AI-powered storytelling, Curipod for dynamic lesson plans, and Menti for student engagement. The session emphasized utilizing AI for teaching and learning, enhancing communication, interaction, and collaboration among peers.

Dr. Buddha Chandrashekar, Chief Coordinating Officer of AICTE, congratulated participants of the AI in education capacity building program and expressed satisfaction in the program's success and the growing interest in AI. He highlighted AI's far-reaching significance beyond education, noting its potential to revolutionize industries. Dr. Chandrashekar shared a German automobile industry example that demonstrated AI's impact through collaboration and digital twinning for student benefit globally. Discussing AI in education, he emphasized data-driven personalized learning, praised AI-driven tutoring systems, and highlighted AI's role in overcoming language barriers for inclusive education using tools like Anu Adhini. He envisioned AI's transformative potential in education and society, proposing a unique education ID for personalized course recommendations. Dr. Chandrashekar stressed hands-on workshops, AI-based assessments, and fraud detection's importance. His optimism for AI's role in India's advancement, coupled with his gratitude to participants and organizers, inspired collaboration and further innovation. Dr. Chandrashekar concluded by urging participants to embrace AI's transformative power for India's betterment. The valedictory address left attendees motivated to explore AI's potential for societal advancement.