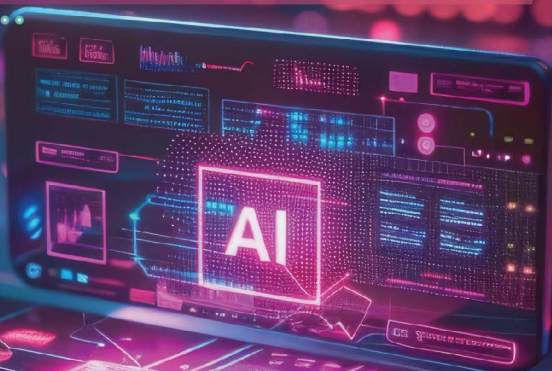




TECHIES

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AI CURRICULUM IN EDUCATION

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AS AI technologies progress, it becomes imperative to integrate AI into our educational curriculum to reflect emerging trends, advancements, and industry demands. An effectively designed AI curriculum should be comprehensive, interdisciplinary, and appropriately aligned with industry standards and educational objectives. However, embracing AI means having to deal with various challenges - ranging from technological complexities to ethical considerations. Clear learning objectives and outcomes should be determined, which involves educators identifying important AI concepts, skills, and competencies that students should acquire. AI is more than just coding or developing algorithms. It comprises the use of data to solve problems and make intelligent decisions. Therefore, in setting learning objectives related to AI, it is important to ensure that students gain a deep understanding of how AI operates in general, including thoroughly understanding fundamental concepts such as machine learning, pattern recognition, and natural language processing.

Learning objectives should comprise the technical skills required to effectively use AI algorithms and techniques such as applying machine learning algorithms, neural networks or other methods to solve different types of problems. Analytical skills are important components of AI learning objectives. Students need to be trained to manipulate and interpret data correctly, recognise patterns and trends, identify important aspects of problem-solving, and make relevant conclusions. By acquiring these skills, evidence-based decisions can be arrived at. Collaborative efforts among educators are also very important to connect the concept of AI to various fields and disciplines. This ensures that AI learning is not limited to one subject only, but is comprehensively coordinated within various areas of study, making the process more interesting, relevant, and accessible to all students. Collaboration between educators opens space for the exchange of ideas and resources, ensuring that students get the most out of AI learning.

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Chief editor's note

Greetings!

**Navigating the Future:
AI, Education, and Innovation**

Welcome to this edition of TECHIES, where we delve into cutting-edge developments that shape our tech landscape. In this edition, we are honoured to present an exclusive interview with our Minister of Science, Technology, and Innovation. Enjoy our engaging dialogue as we uncover the key priorities and goals for nurturing Malaysia's tech talent and discuss how the government identifies and reviews technology priority areas to keep our nation at the forefront of innovation.

Our main article explores the integration of Artificial Intelligence (AI) into the educational curriculum. As AI reshapes industries globally, its inclusion in education is crucial to prepare our future workforce. We probe into flexible course structures and emphasise the importance of ethical considerations to ensure responsible and inclusive AI development. Additionally, we feature an insightful piece on AI in Massive Open Online Courses (MOOCs). Discover how AI is transforming MOOCs into more interactive and personalised learning platforms, revolutionising education for millions around the world. We also present an in-depth look at Large Language Models (LLMs), discussing their essence, practical applications, societal benefits, and the challenges they pose.

Join us as we navigate these compelling topics and more, shedding light on the dynamic world of technology and its profound impact on our society.

Zuraidah Mohd. Zain

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The integration of AI in education requires significant changes in the roles and responsibilities of educators, who must adapt to new teaching paradigms. This process requires extensive professional development and ongoing support. The rapid pace of progress in AI means the learning content must always be updated and relevant. Educators must continually update their knowledge of the latest developments in AI and integrate them into the curriculum. This can be very challenging, especially for those without computer science or technology background. However, with sufficient support, educators can feel more confident and motivated to accept and apply AI concepts appropriately.

Collaboration between educators, industry professionals, researchers, and policymakers should be ongoing to capture evolving educational needs and to update the curriculum so that it remains relevant, engaging and effective. By considering the views and needs of the industry, the curriculum can be adapted to current standards, ensuring that students are equipped with the necessary skills to enter AI-related job markets. Collaborating with industry partners, research

institutions and the community provides valuable opportunities for students to gain mentorships, internships and real-world experience in AI. This enables them to apply their knowledge and skills in real-world situations and opens the door for cross-sector collaborations.

Offering flexible course structures allows students to customise their AI education based on their interest. Learning institutions can offer elective courses or specialised AI tracks to increase accessibility and relevance. Incorporating emerging technologies such as augmented reality (AR), virtual reality (VR), and blockchain into the AI curriculum enhances student engagement and provides hands-on opportunities for exploration. Needless to say, educators should be given all the support they need in the form of the most up-to-date delivery training techniques and access to the latest resources available.

Assessing students' understanding of AI presents quite a challenge because traditional forms of assessment do not effectively capture the various skills needed to succeed in AI. Most traditional assessments tend to focus on memorising facts and answering pre-existing questions, which do not always reflect students' ability to apply

AI concepts in real-world situations. Therefore, educators need to use more holistic and contextual assessment mechanisms. Frequent assessment and the use of different types of assessment methods will enable a more comprehensive picture of students' progress to be garnered. Educators can then adjust their teaching styles and pace according to the individual needs of students. Additionally, assessments must cover a range of skills needed to succeed in AI, including analytical skills, creativity, problem-solving, and collaboration. This requires assessments that not only measure knowledge of AI concepts but also students' ability to apply that knowledge in various situations and produce innovative and relevant results.

Ethical considerations in AI is of utmost importance. Students should be able to comprehend the moral and ethical implications of using AI in various contexts. By providing a platform for ethical discussions, students are empowered to make ethical, meaningful and responsible decisions about the use of AI in their own lives. Ethical discussions also allow them to relate their learning to important moral and social values in society, hence shaping their views on how AI should be used to promote positive outcomes



while avoiding potential negative impacts. This helps to ensure that the use of AI aligns with virtuous principles such as good moral values and sustainable development.

Bridging the digital divide for equitable access to AI education is a concern worth deliberating. The divide refers to differences in the ability of individuals or groups to use related resources, which can significantly impact equitable access to education. Initiatives such as scholarship programs, grants, and financial assistance can reduce financial barriers for disadvantaged students, enabling them to gain access to necessary technology and internet connectivity. In this way, those from economically disadvantaged backgrounds can also take advantage of the

learning opportunities provided by AI curriculum. Computer centres or internet access facilities in libraries enable students, regardless of their economic background, to have equal opportunities to access learning materials and engage in AI instructions. By providing adequate support and resources to overcome the digital divide, AI education can be more inclusive - benefiting all students, strengthening educational equity, and increasing opportunities for all.

Exploring innovative pedagogies plays an important role in the integration of AI curriculum in education. By leveraging a more interactive and student-centred learning approach, educators can ensure active involvement from students via problem-based projects, game-based exercises and other collaborative activities that involve solving problems together. Additionally, the ability to critically evaluate online information, including understanding the way AI algorithms shape content, is essential. In a world increasingly filled with online information, students need to be capable of filtering relevant and reliable information.

In conclusion, embracing AI in today's curriculum is essential to prepare students to succeed in a rapidly changing world driven by AI technology. A good AI curriculum complements human creativity and critical thinking skills with tools and resources that inspire innovation and deep research, preparing students to be productive members of an increasingly digitally-connected society.

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Nurturing Malaysia's Tech Talents:

An Interview with
**Yang Berhormat
Tuan Chang Lih Kang**
Minister of Science,
Technology and
Innovation



MALAYSIA is on route to develop local science, technology dan innovation (STI) talent in line with our National Science, Technology and Innovation Policy (NSTIP) 2021-2030 aspiration, towards positioning the country as a high-tech nation. We remain in 36th position out of 132 countries in the Global Innovation Index (GII) 2023 with a score of 40.9, which has improved from 38.7 in 2022. We have retained the top position of graduates in the science and engineering sub-indicator and also improved our position in human capital and research (32nd compared to 38th); market sophistication (18th compared to 26th); business sophistication (36th compared to 41th); and knowledge and technology outputs (37th compared to 39th).

Apart from these accomplishments, we are still facing challenges in achieving our national target to have 130 researchers for every 10,000 labour force by 2025. Between 2010 and 2016, the number of researchers per 10,000 labour force had increased, indicating an encouraging growth. However, being hit by the COVID-19 pandemic in 2020, the figure declined to 33.4 researchers per 10,000 labour force. The decline highlights challenges in sustaining and growing the research workforce in recent years, and this may have implications on the overall research and development landscape in the country. The establishment of our cross-ministerial committee, namely Jawatankuasa Pemandu Bakat STI Negara, which is led by MOSTI, is a proactive step to ensure the sustainability of science, technology and innovation talent development.

What are the key priorities and goals of your ministry in terms of fostering talents in innovation and technological development in Malaysia, particularly in emerging fields such as artificial intelligence (AI) and advanced computing?

In my New Year's message, I highlighted our commitment to Hydrogen, Artificial Intelligence (AI), Biotechnology, Startup Ecosystem, and Space Technology as key areas for capacity building. By 2025, we aim to cultivate 10,000 AI talents, 1,000 certified AI professionals, 2,000 AI-competent trainers, and 100 AI champions. Collaboration is planned with MDEC, the Ministry of Human Resource, and industry leaders to enhance AI skills through upskilling and reskilling initiatives. Additionally, we are establishing the Centre of Excellence for Research and Development of Space Legislation and Policy, with a 2024 goal to train 55 experts in Space Law and Policy.

Moreover, we are prioritising the enculturation of science and technology with community-driven programs like National Science Week, Malaysia Techlympics, and STEM Camps. These initiatives are fundamental in sparking interest and knowledge in STEM among young Malaysians. By integrating early exposure to science and technology, we are nurturing a generation eager to drive technological progress, ensuring the sustainability of our talent development in emerging technologies. This holistic approach supports our broader objectives to create a well-informed society that appreciates and contributes to scientific and technological advancements.

Could you explain the process by which the government identifies and reviews these technology priority areas, and how often is this technology roadmap updated to reflect new developments or changing priorities? How does this affect MOSTI roles in developing talents?

I always emphasise the importance of the Whole of Government Approach (WGA), which is the collaboration of various ministries and agencies, industries, academia, and communities. Through townhall sessions, dialogues and public engagement, MOSTI acquires important inputs to plan and determine priority areas of technology for Malaysia to venture into. Through agencies such as the Malaysia Industry-Government Group for High-Tech (MIGHT), we have developed policies/roadmaps based on technology foresights through big data analytics and





The policies and roadmaps set the best scenario for Malaysia to champion all of the stipulated technologies through technology adoption in potential sectors, especially in high growth high value (HGHV) industries.”

scenario planning. We abide by the Malaysia Plan and other policies related to national interests, for instance, the New Industrial Master Plan (NIMP) and the National Energy Transition Roadmap (NETR). Our technology roadmaps are reviewed in accordance to the whole national agenda. The policies and roadmaps set the best scenario for Malaysia to champion all of the stipulated technologies through technology adoption in potential sectors, especially in high growth high value (HGHV) industries. Our policies and roadmaps also identify areas for capacity building while charting industry demand to attract STEM talents.

With rapid advancements in AI and automation, there are concerns about job displacement and the need for reskilling the workforce. What strategies and policies is the government pursuing to ensure that Malaysia's talent pool remains competitive and adaptable in the face of these technological disruptions?

Our Jawatankuasa Pemandu Bakat STI Negara, which is led by MOSTI, is the platform to discuss this matter through the Whole of Government Approach (WGA) and the dynamics of the job market demand data. Automation is not the single factor for job displacement. Technology and the innovation of tech-products contribute to the loss of jobs. Hence, the dynamics of the job market demand must be analysed so as to come up with the best economic model that

balances between the demand of the job market and the talent supply from higher learning institutions. With the correct model, the government may bring out several interventions which consist of strengthening the R&D ecosystem among industry players, while reviewing the talent supply in terms of skills, additional knowledge, and hands-on training in collaboration with the industry.

As technologies like AI continue to advance rapidly, what steps are the government taking to develop appropriate regulatory frameworks and ethical guidelines to address concerns around data privacy, algorithmic bias, and the responsible development and use of AI systems?

The government, through MOSTI, has developed the National Artificial Intelligence Governance and Ethics (AIGE) which is in line with the first strategy under the National Artificial Intelligence Roadmap 2021-2025. The main objective of the guideline is to provide a comprehensive and practical guide for Malaysia in the aspects of developing, designing and using AI technology for public users, policy makers and the industry (providers or developers of AI-based technologies). In general, it describes the seven principles of responsible AI. Adherence to the guideline will ensure the ethical and safe use of AI. Nevertheless, AIGE does not involve enforcement, in fact it is just a guide for industry players to avoid making mistakes and thus avoid anything that does not benefit others.

As someone with an engineering background, what initiatives from the government have you found most effective in supporting the development of STEM talent and retaining skilled professionals in Malaysia?

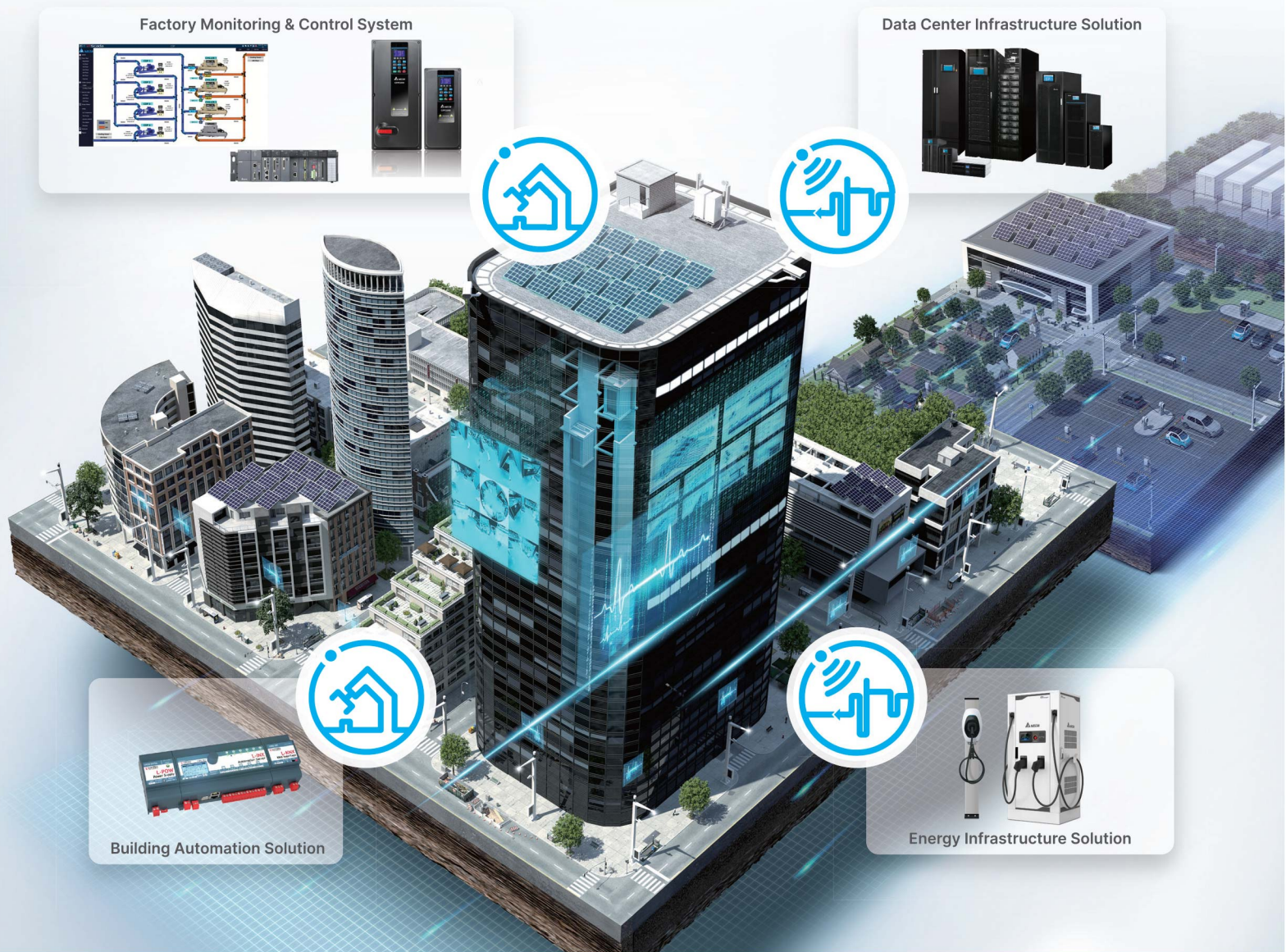
Special programs to scout and nurture talents right from pre-school are very important in STEM talent development. Various demographic and geographical factors have created gaps in nurturing STEM in our community. Hence,

formal learning at schools and higher education institutions must be supported with the informal learning of STEM, which is what MOSTI has offered through our Science-Tech 4U Program. Apart from that, various scholarships and high prospect jobs are crucial in retaining local STEM talent. We hope to reduce brain drain and leverage on local expertise to push our national agenda of becoming a high-tech nation. To add, the government's effort to boost gig-economy through digital transformation has encouraged many STEM talents to establish more start-up companies. The number is estimated to reach 5,000 by 2025.

MBOT comprises professionals with expertise in various technological fields. How can the government leverage the knowledge and experience of MBOT members to inform policy decisions, promote best practices, and contribute to the country's technological advancement?

The government engages many stakeholders and parties to gather information, advice and insights on the way forward of the country's science and technology agenda. The National Science Council, chaired by our Prime Minister, is the best platform for industry experts and policy makers to discuss the matter. Apart from that, Science, Technology and Innovation Ministers and Excocs meetings (MEXCO-STI) are held every year to bridge the federal and state government agendas while sharing best practices between the parties. MBOT can contribute proposal papers through these platforms, as well as notify the councils on any related updates. I hope MBOT will play a critical role in carrying out studies and market analysis on the skill sets needed by current and future industries. The findings will become a salient input for the government to establish effective policies for a sustainable and conducive science, technology and innovation ecosystem. In addition, I think the prestige of MBOT's recognition helps much in attracting more students to venture into the field of science and technology.





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Artificial Intelligence (AI) in Massive Open Online Course (MOOC)

IN today's fast-paced world, demand for distance and virtual learning mechanisms has increased, driven by rapid advancements in internet and Web 2.0 technologies. Global crises like the COVID-19 pandemic underscore the importance of such approaches.

MOOCs (Massive Open Online Courses) are expansive online courses open to anyone with internet access, typically without cost. Certain MOOCs may include a fee for credit or accreditation. MOOCs are now offered by numerous universities worldwide, providing high-quality courses. Examples of MOOC providers are Udacity, Coursera, and EdX. The courses have unlimited participation, and utilise both traditional and newer teaching methods like lectures, videos, reading materials, forums, blogs, and social media for instructor-learner interaction. The concept of MOOCs originated from Canadian scholars Stephen Downes and George Siemens, who introduced the course "Connectivism and Connective Knowledge" in 2008. The idea began even earlier in 2001, with MIT's OpenCourseWare initiative, which made campus teaching materials publicly accessible.

For a course to be considered massive, it should have over 2000 learners, although MOOC sizes can range from 54 to over 40,000 participants. The "open" in MOOCs signifies content that can be retained, reused, revised, remixed, and redistributed. MOOCs comprise xMOOCs and cMOOCs. xMOOCs follow a traditional learning approach, while cMOOCs are based on the Connectivism Learning Theory, as shown in Figure 1.

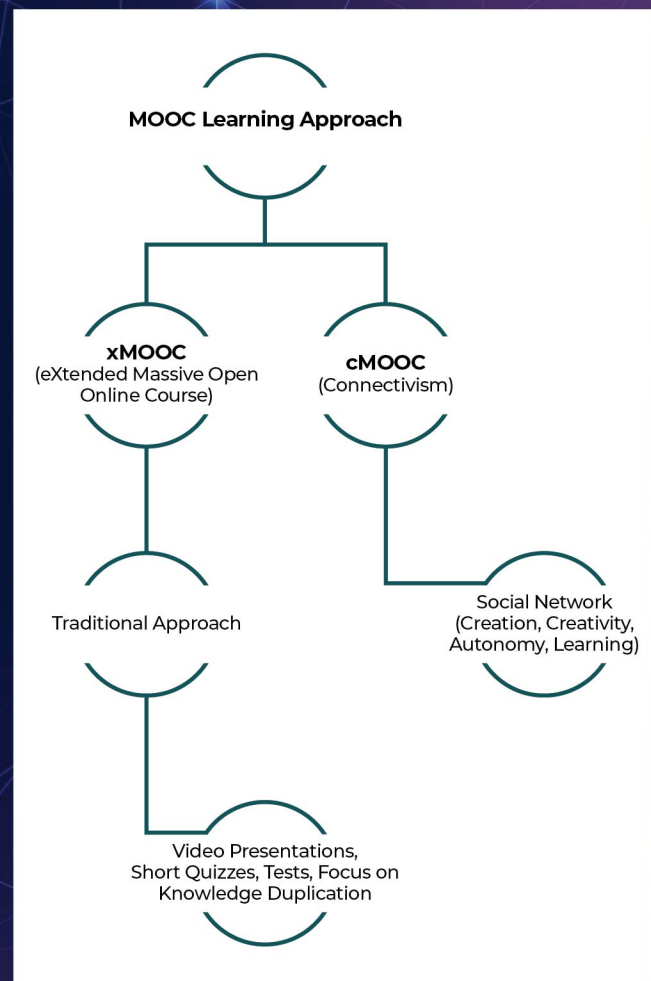


Figure 1. MOOC learning approach.

Learning Theory and MOOCs

MOOCs signify a shift in traditional teaching and learning methods, which necessitates an understanding of learning theories that underpin instructional design in expansive, open online settings. Learning theories frequently used in MOOC development includes Bandura's Social Learning Theory, along with the Constructivism and Connectivism theories. In a formal learning environment, interactions can take place between instructors and learners or among learners themselves. In more informal settings, such as the Internet, where knowledge is accessible to anyone with a computer and online access, learning occurs informally. A constructivist approach in MOOCs involves centralised peer-to-peer learning facilitated by Moodle software, discussions, blogs, online lectures, and online video meetings. MOOC learning environment comprises interactions with numerous peers, teamwork, discussion, debate, and collaborative knowledge-building.

Artificial Intelligence (AI) and MOOC

Artificial Intelligence (AI) has become instrumental in the success of modern MOOCs. By harnessing vast amounts of learner-generated data, AI techniques contribute to a deeper understanding of the MOOC ecosystem and the learners themselves. This comprehension empowers MOOC providers to enhance course offerings, elevate learner experience, and improve learning outcomes.

Integrating AI tools into MOOC videos can enhance navigation and viewing experiences, leading to increased learner engagement. Moreover, it automatically identifies related topics within MOOC videos and provides an interface for learners to navigate many areas of interest. However, overwhelming volume of forum posts can deter learners from staying engaged. Therefore, AI tools are used to discern and recommend the most pertinent content to learners, streamlining their experience. To cater to learners



of different demographics, personalisation is crucial. As learners generate significant amounts of learning behaviour data through their interactions in MOOCs, AI comes in handy to analyse and derive insights from this data. To add, AI knowledge representation tools that model logic flows can be employed to support personalised learning, helping learners keep track of their personalised learning paths and serving as a knowledge representation format to record the paths in a machine-understandable way.

AI in MOOC Assessment

The utilisation of automated assessment within MOOCs offers immediate and detailed feedback to learners regarding their progress, pinpointing areas requiring improvement. This is effective for multiple-choice questions in course assessments. Moreover, automated essay scoring AI tools can evaluate subjective assessments. The tools analyse factors such as vocabulary

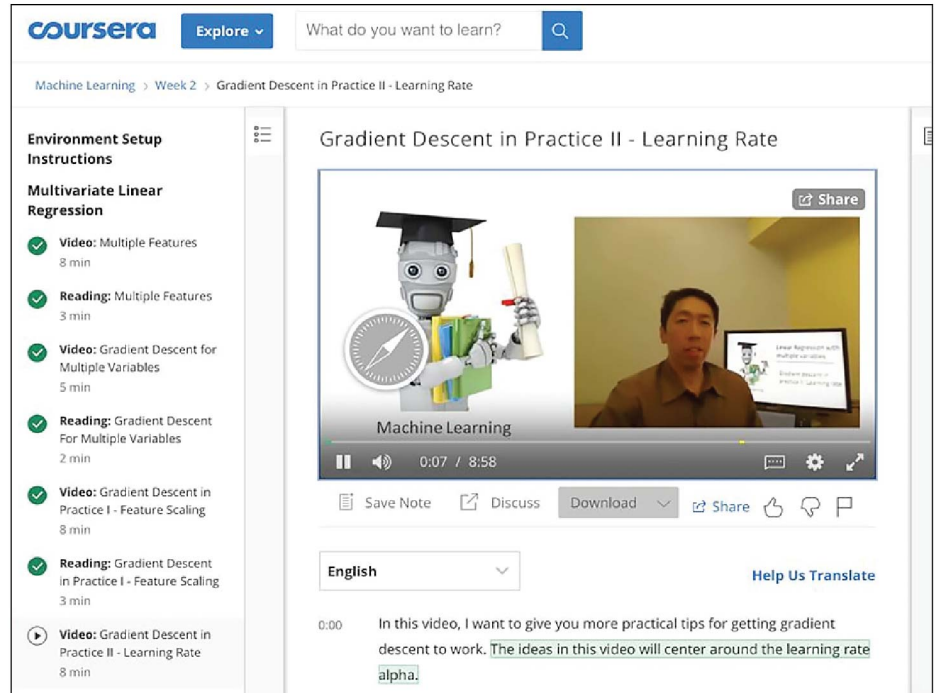


Figure 2. Organisation of topics in Machine Learning course.



usage, word count, and grammar, learning from essays developed by instructors. Advanced AI systems employ natural language processing

techniques like semantic analysis, sentiment analysis, and text summarisation for more sophisticated evaluation purposes.

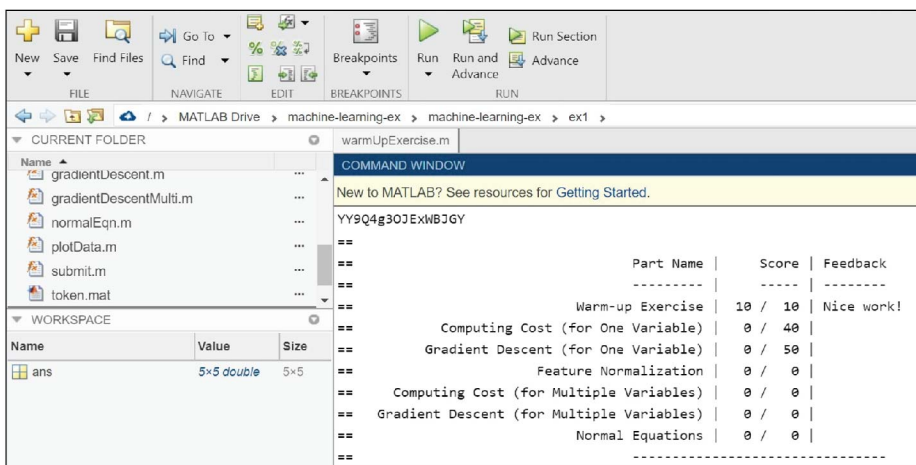
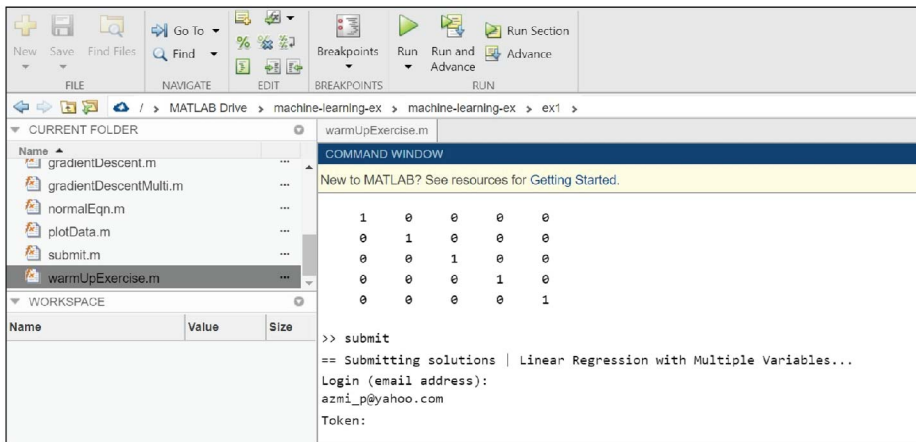


Figure 3. Practical assignment in MATLAB.



networks, and machine learning algorithms, and requires a total of 54 hours to complete. The delivery method of the course is through video sessions, offered in MP4 format. Transcripts are provided in 16 languages. In addition to videos, reading materials are available and downloadable in Acrobat Reader PDF format. Videos and notes are arranged alternately in each topic to cultivate learners' interest and attention, as shown in *Figure 2*.

Coursera Machine Learning Course: Assessment

To evaluate learners' comprehension, assessments are conducted via quizzes and assignments. Seventeen quizzes and eight programming assignments are provided, along with peer-graded assignments. Quizzes are of multiple-choice and fill-in-the-blanks formats. Learners must complete quizzes and assignments at the end of each topic, with a passing mark set at 80%. An answer scheme is provided for each quiz and assignment to help learners correct their mistakes. All quiz



These applications improve assessments by expediting the process and minimising the time and expenses involved in human evaluation, interpretation, and review of learners' work."

answers are automatically checked and graded by Coursera, showcasing the platform's AI features. Learners can retake quizzes and assignments if they fail but each attempt will feature a different set of questions. Quiz scores carry a weight of 1.96%, while assignment scores are weighted at 8.33%. These marks will be combined to determine the final grade at the end of the course.

Practical assignments are included in the course, requiring learners to

complete programming exercises using MATLAB software. The answers must be submitted, and are automatically evaluated by AI tools in the system. An example of practical assignments in MATLAB is shown in *Figure 3*.

Conclusion

Coursera offers a wide range of courses from top universities, allowing learners to choose the ones that interest them. Its flexible format enables learners to study at their convenience, making it beneficial for working professionals. Learners can access materials, exercises, and assignments anytime, anywhere.

To manage large number of learners on Coursera, AI tools are used to grade assignments. These tools assess only basic cognitive skills, like remembering facts, which is the lowest level of Bloom's Taxonomy. At the moment, higher-order thinking skills, such as evaluation and creativity, are challenging for AI to assess accurately in the Coursera system.



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Unveiling the Future: The Transformative Power of Large Language Models in AI

IN the swiftly evolving landscape of artificial intelligence (AI), Large Language Models (LLMs) stand out as pillars of technological advancement, reshaping the way humans interact with digital systems. These sophisticated models, built upon extensive datasets and requiring substantial computing power, have the potential to revolutionise a multitude of industries by providing more intuitive and effective natural language processing capabilities. This article delves into the essence of LLMs, their practical applications, societal benefits, associated challenges, and promising future prospects.

Understanding Large Language Models

The AI landscape is rapidly evolving, with advancements spanning from sophisticated language models like OpenAI's GPT series, Google's Gemini, Facebook's LLaMA, X's Grok, and Anthropic's Claude, to groundbreaking image and video generators such as Stable Diffusion, Midjourney, Sora, and Runway. These technologies are reshaping the boundaries of content creation, enabling new forms of artistic expression and multimedia experiences by seamlessly integrating text, images, and videos. However, as these capabilities are harnessed, ethical considerations and societal impacts, particularly, regarding authenticity and misinformation, become increasingly crucial. This convergence of AI capabilities signals a transformative shift in digital content interaction, emphasising the need for a balanced approach that fosters innovation while mitigating potential risks.

Practical Applications and Benefits

The real-world applications of LLMs are vast and varied, touching upon virtually every sector imaginable. In customer service, chatbots powered by LLMs offer personalised, efficient support, significantly enhancing user experience. Educational tools leverage LLMs to provide adaptive learning platforms, offering students tailored educational content and feedback. In the legal and healthcare sectors, these models assist in document analysis and research, streamlining the review of complex texts and aiding in diagnosis and treatment planning. Moreover, LLMs have been instrumental in language translation services,

breaking down communication barriers and fostering global connectivity. For businesses and institutions, the adoption of LLM technology can lead to increased efficiency, reduced operational costs, and improved customer satisfaction. Early adopters typically include tech-forward companies, educational institutions, healthcare providers, legal firms, and customer-centric businesses looking to leverage AI for a competitive edge.

The Role of Supercomputers and Accessibility

The development of LLMs requires immense computational resources, with supercomputers playing a pivotal role in their training. Companies like NVIDIA are at the forefront, providing the necessary GPU technology to process the massive datasets involved. However, the high cost and technical requirements limit the ability of many organisations to develop their own models. Major players in the field include OpenAI, Google, and others that have the financial and technical capabilities to undertake such projects. In the transformative year of 2023 for AI, cloud platforms have become instrumental in democratising access to LLMs, enabling a diverse range of tech enthusiasts, from small developers to emerging businesses, to tap into the advanced capabilities of LLMs without the complexities of developing these models from scratch. These platforms serve as gateways to a myriad of models, including but not limited to Google's comprehensive BERT, Meta's efficient LLaMA, and Anthropic's ethically-minded Claude, alongside open-source powerhouses like GPT-NeoX-20B, GPT-J-6b, and the innovative capabilities of

models such as BLOOM and Falcon for specialised tasks. Salesforce's CodeGen exemplifies the specialised use case scenario, further broadening the horizon for application-specific AI solutions.

By leveraging these cloud-based resources, smaller entities gain the leverage needed to deploy cutting-edge AI functionalities, from customer service automation to content creation, thereby leveling the playing field in the fast-evolving digital ecosystem. These platforms enable businesses of all sizes to integrate advanced language understanding and generation capabilities into their products and services, fostering innovation and inclusivity in the tech landscape.

Promotion and Policy for Accelerated Adoption

Local tech vendors are pivotal in driving the adoption of LLMs by crafting solutions tailored to the unique demands of various industries. For instance, a vendor could develop a custom LLM solution for a retail chain, enabling personalised shopping experiences through AI-driven product recommendations. This not only enhances customer engagement but also significantly boosts sales by aligning product suggestions with individual customer preferences. Another practical example is that of a vendor specialising in healthcare, implementing an LLM to streamline patient data management. By integrating an AI system that can accurately interpret and organise vast amounts of patient data, healthcare providers can offer faster, more accurate diagnoses, improving patient outcomes and operational efficiency.

Policymakers also have a strategic role in propelling LLM adoption forward. Initiatives such as the AI Innovation Hub - a government-funded centre focusing on AI research and development, can serve as a collaborative space where academia and industry experts come together to innovate and share AI advancements, thus spurring the growth of local AI technologies. Furthermore, offering tax



Education and training are also crucial. Imagine a national program like the "Future AI Leaders" initiative, aimed at equipping local talent with advanced AI skills through scholarships, internships, and partnerships with tech companies."

incentives or grants for businesses that integrate AI into their operations can significantly lower the financial barriers to LLM adoption. For example, a small to medium-sized enterprise might be encouraged to adopt AI for improving its supply chain management, knowing that initial costs are offset by government incentives. Education and training are also crucial. Imagine a national program like the "Future AI Leaders" initiative, aimed at equipping local talent with advanced AI skills through scholarships, internships, and partnerships with tech companies. By creating a skilled workforce, a sustainable ecosystem that can continuously innovate and leverage the advantages of LLMs can be ensured. By incorporating these tangible examples, the narrative becomes more relatable and underscores the practical steps that can be taken by both local tech vendors and Malaysian policymakers to foster the adoption of LLMs, ultimately driving technological progress and economic growth.

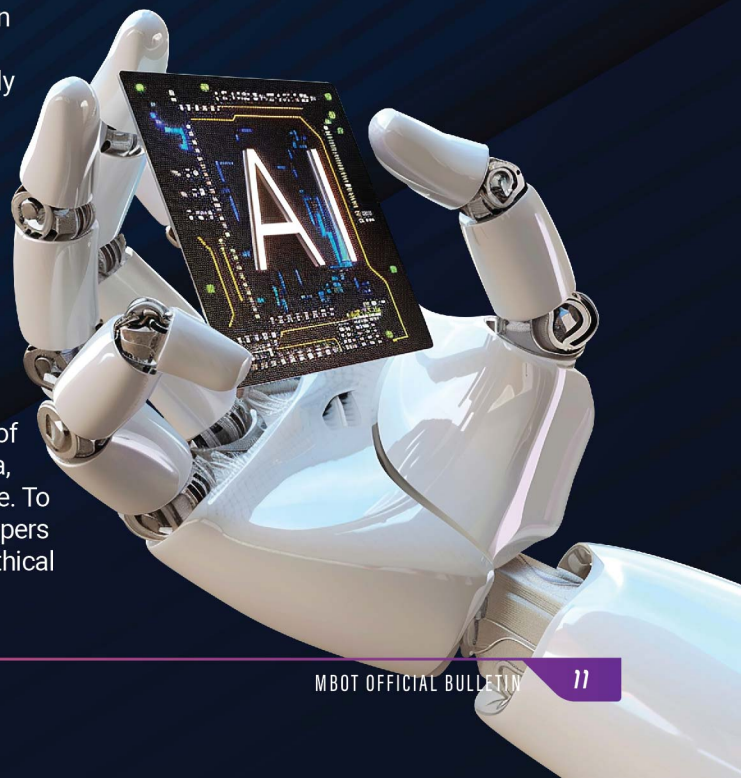
Risks, Security Measures, and the Path Forward

Despite their potential, LLMs pose certain risks, including data privacy concerns, the propagation of bias present in training data, and the potential for misuse. To mitigate these risks, developers and users must prioritise ethical

AI practices, implement robust security measures, and ensure transparency in LLM development and deployment. Localising LLMs for internal use and closely monitoring their application can help in maintaining control over these powerful tools.

The future of LLMs is bound to witness significant advancements, with research geared towards achieving Artificial General Intelligence (AGI) — machines with the ability to understand, learn, and apply knowledge across a wide range of tasks. This pursuit promises to further blur the lines between human and machine capabilities, opening up unprecedented opportunities for innovation and problem-solving.

In conclusion, LLMs represent a pivotal advancement in AI, offering transformative potential across industries and society. While challenges remain, particularly in terms of accessibility, security, and ethical considerations, the continued development and thoughtful integration of these models herald a future where the symbiosis between humans and AI enhances our capabilities and broadens our horizons. With strategic support from policymakers and a commitment to responsible AI development, the journey towards an AI-augmented future is not just a possibility but an inevitable reality.





MBOT Northern Symposium 2024: Technological Innovation Through Tech Talents

THE Malaysia Board of Technologists (MBOT) Northern Symposium 2024 was held on 11th May 2024, in collaboration with Wawasan Open University, Technological Association Malaysia (TAM), and IEEE. The prestigious event followed the resounding success of last year's symposium held at the Borneo Cultures Museum in Sarawak. The program was graced by YB Jagdeep Singh Deo, Deputy Chief Minister of Penang.



With the theme "Technological Innovation Through Tech Talents," the symposium served as a dynamic platform to encourage expertise-sharing and facilitate information-transfer related to cutting-edge technologies. It connected professional members of MBOT under a strategic network, fostering the exchange of knowledge and collaboration with tactical partners in the northern region of Malaysia.

sharing sessions, where industry leaders shared their insights and experiences on emerging trends and challenges in the tech industry. A thought-provoking forum promoted awareness of talent and ignited a collective drive towards advancing global technology. Additionally, an engaging exhibition provided networking opportunities with industry professionals and experts.

The highly anticipated event was attended by more than 250 attendees comprising MBOT members, representatives from various industries, institutions, government agencies, and renowned organisations. It was no doubt a resounding success. Meaningful discussions and alliances were made possible, which would undoubtedly shape the future of technology in Malaysia.

The main activities and programs of the event included expert and technical



/mbot registration

50,349

Graduate Technologists

10,772

Qualified Technicians

23,068

Professional Technologists

3,070

Certified Technicians

87,259

Total MBOT Registrants
(As of June 2024)