

FACULTY RETREAT 2024

August 20, 2024

Panel Discussion on AI and The Future of Work*

While technological advancements have always reshaped industries and societies, the pace at which Artificial Intelligence (AI) is evolving the workforce and social landscape is unprecedented. [Artificial Intelligence](#) (AI) refers to simulating human intelligence (learning, reasoning, perception, and language) in machines. It's crucial to not only understand AI but also use it effectively and stay updated with its advancements. This brief aims to highlight the necessity for updating human skills alongside AI and technological developments.

Although AI excels at automating tasks and analyzing data, it has its own challenges. Adept at forecasting, AI often lacks comprehension of social, cultural, or economic nuances that can significantly impact its predictions. Issues of quality data, privacy, ethical concerns, and AI's environmental impact are pervasive, (see CLT brief on [AI Challenges at the Workplace](#)). The world needs to shift towards better human-machine collaboration, moving from AI-generated (machines create solutions independently) to AI-assisted (machines provide support and insights for human decisions) and ultimately to [AI-augmented](#) (AI enhancing human capabilities) model. Ethan Mollick aptly calls for development of 'co-intelligence' as the future skill for humankind

Impact of AI on Evolving Job Horizon

The [World Economic Forum's Future of Jobs Report](#) predicts a net increase of 97 million AI-powered jobs in decision-making, product development, and customer service by 2025. AI presents a double-edged sword, with 75% of companies planning for AI adoption with 50% expecting AI related job creation but 25% anticipating job losses, especially for roles like office workers, production workers, and customer service representatives. [McKinsey Global Institute's 2024 Report](#) reports an increasing focus on [concurrent AI skills](#) development alongside existing expertise in areas such as STEM, healthcare, big data analytics, climate-focused technologies, and cybersecurity which are all anticipated to grow significantly.

Skills for a Changing Landscape

[Digitization](#) has created a major shift but with [AI significant disruption](#) (44%) is anticipated within five years. While demand for physical and higher cognitive skills will stabilize, technical, social, and emotional skills are expected to surge. At campuses, [QS research](#) shows that as a result of AI, students are showing a growing interest in computer science programs programmes

The need for [AI literacy](#) (understanding AI concepts, applications, implications, and practical skills for real-world use) will be key for all. This shift in job tasks necessitates a comprehensive approach to skill development, encompassing three key domains: knowledge, attributes, and skills (McKinsey & Company, 2024; UNESCO, 2021).

Knowledge

The integration of AI and digital technologies across industries demands a deep understanding of these systems. Workers must be equipped with:

- **AI and Technology literacy:** Deep understanding of AI algorithms, data science, and emerging technologies.
- **Business Acumen:** Strong grasp of financial models, market trends, and strategic planning.

Skills

Evidence from online job openings reported in [World Economic Forum](#) (2023) highlights the importance of specific skill sets that give employees a competitive edge, including the following:

- **Analytical Thinking:** Ability to process complex data, identify patterns, and draw insights.
- **Creativity:** Innovation, problem-solving, and generating new ideas.
- **Digital Skills:** proficiency in AI tools, software applications, and digital platforms
- **Soft Skills:** interpersonal skills, leadership, adaptability

Attributes

The future workforce must cultivate socio-emotional attributes such as:

- **Growth Mindset:** Curiosity, lifelong learning, and adaptability.
- **Emotional Intelligence:** Resilience, motivation, self-awareness, and empathy.
- **Collaboration:** Teamwork, communication, and interpersonal skills.

AI Transforming The Workplace

Over 75% of companies globally plan to adopt big data, cloud computing, and AI technologies in the next five years. The industries [most affected](#) by AI use are as follows:

Education and Training:

AI's potential to personalize learning hinges on a [human-centered approach](#) that prioritizes AI literacy. This necessitates a multi-faceted approach encompassing

not only technological applications (learning with AI) but also the methods of instruction (learning about AI) and the broader societal implications (learning for human-AI collaboration.) Building on existing frameworks, a needs-based categorization of [potential AI applications](#) in education is needed, including: (i) education management and delivery, (ii) learning and assessment, (iii) empowering teachers and enhancing teaching, and (iv) lifelong learning

Healthcare

AI is revolutionizing [healthcare workplaces](#), empowering clinicians with advanced capabilities. Machine learning algorithms unearth disease patterns and accelerate drug discovery, while AI-assisted robotics and automation empower clinicians. To thrive, healthcare professionals must adapt, embracing data analysis, understanding limitations, and collaborating with AI. There will also be a need for new roles, such as data scientists and medical leaders who can shape clinically meaningful AI.

Business and Manufacturing

AI-driven business transformation redefines how companies operate, interact with customers, and make decisions. This extends beyond automation, fostering entirely new models and functionalities. While classical AI excels at data analysis, generative AI disrupts the game by mimicking human creative abilities. Mastery of AI technologies, data strategy, and fostering an AI-embracing culture are crucial, alongside process re-engineering. The future promises deeper AI integration, with trends like autonomous operations, AI-IoT convergence, and a focus on ethical development.

Insurance and Finance

AI is revolutionizing insurance, using machine learning to analyze data, assess risks in real-time, personalize products, and streamline processes. This not only cuts costs and boosts efficiency, but also enhances customer experience. The market value of AI in finance, [\\$9.45 billion in 2021](#), is projected to grow 16.5% by 2030. However, this sector needs to prioritize data privacy and fairness to ensure AI benefits both companies and customers.

Cybersecurity and Surveillance

AI is rapidly transforming [cybersecurity](#) by enhancing detection, response, and proactive defenses. It streamlines operations through automation, empowering security teams to focus on complex investigations and strategic threat mitigation. However, to leverage this power, a "skills renaissance" is needed. Cybersecurity professionals will require data analysis [expertise](#) to harness AI's potential, while retaining critical thinking, problem-solving, and communication skills to translate AI insights into action.

Energy

The energy industry faces a complex challenge: balancing efficiency and production with environmental responsibility. AI offers [promising solutions](#) like

predictive maintenance, optimizing energy use, and developing sustainable materials. Additionally, AI-powered building management systems analyze sensor data to intelligently adjust HVAC, lighting, and other energy-intensive components to minimize energy wastage, aligning with sustainability goals. However, the energy used to train and run AI models, as well as potential biases in algorithms, could worsen climate change.

Media and Communication

AI is revolutionizing how we consume, produce, and distribute information. AI-powered tools personalize content delivery, suggesting news articles, social media posts, and advertisements tailored to our interests. A blend of creativity, storytelling, media literacy, and AI literacy is crucial for success. While AI offers significant benefits, it's important to address ethical concerns like bias in algorithms and the potential misuse of deep fakes.

Legal Industry

The legal industry is on the verge of an AI revolution which can streamline legal practices through document automation, improved client management, better research, and optimized workflows, leading to increased efficiency for law firms. However, ethical and legal challenges, such as digital rights and jurisdiction over AI components, need addressing. To ensure sustainability and protect human rights, the UN General Assembly adopted its [first resolution in 2023](#) on harnessing safe, secure, and trustworthy AI systems for sustainable development. Responsible implementation still requires a long way to go as policymakers continue to develop clear legal frameworks for all sectors.

While the global landscape of AI integration offers a wealth of insights, a lot of clarity is still required for Pakistan's specific context. Developing countries face unique challenges in AI adoption, including limited infrastructure, a shortage of skilled professionals, and potential social unrest due to job displacement. In Pakistan, where over [60 million people](#) are illiterate, the conversation around AI needs to address the digital divide and ensure inclusive growth.

AI undoubtedly presents exciting opportunities, the conversation around the future of work shouldn't solely focus on the most talked-about technologies. As [Andrew Maynard observes](#) regarding the World Economic Forum's list, "Rather than being digital tech-or consumer tech-heavy, the WEF list casts a broader net to include technologies that are not necessarily trending on social media or making headlines but that nevertheless have the potential to be transformative". This broader perspective reminds us to consider the full spectrum of innovations that can reshape workplaces, not just the ones currently capturing the spotlight.

*Please note this is an AI assisted draft developed by Education Developer-CLT Ifrah Nadeem, supervised by Dr Zia, July 2024.

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