

# The effect of AI on workforce evolution

Prof Douglas Kunda, PhD  
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# Introduction

- + Effective and strong HR systems is foundational for organizational success, as it aligns human capital management with strategic goals by creating a productive, and adaptable workforce.
- + Artificial intelligence (AI) can be used to automate most of the HR systems and procedures thus improving work efficiency and productivity.
- + Technological changes like AI are reshaping how work is done, who does it, and what new work looks like, requiring organizations to adapt to stay relevant and competitive
- + Workforce evolution is about how employees and employers adapt to technologically integrated work environment and other factors.
- + This presentation will introduce AI and its application on HR functions and then discuss the effect of AI on workforce evolution

# Workforce evolution

- + Workforce evolution refers to the ongoing changes in the structure, skills, demographics, and expectations of the labor force over time.
- + It is influenced by technological advancements, economic shifts, demographic changes, and cultural trends, leading to new ways of working and managing talent.



# Workforce evolution key elements

- + **Technological Advancements** is encouraging automation of tasks, artificial intelligence, and digital tools are transforming jobs and tasks.
- + The shift to **remote and hybrid models**, especially after the COVID-19 pandemic, has redefined the traditional office setup.
- + Many organizations are now adopting hybrid models, balancing remote and in-person work.

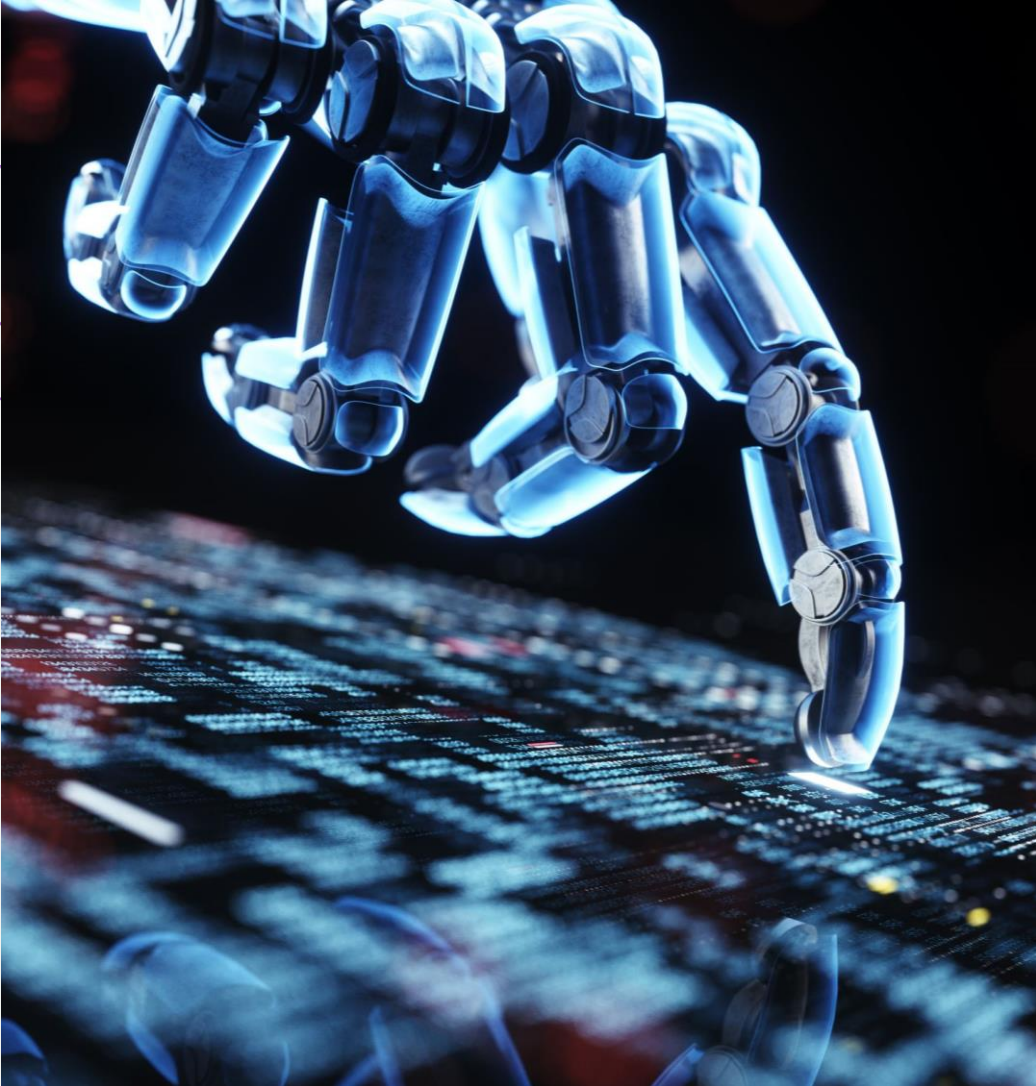


# Workforce evolution key elements

- + As populations age and diversity increases, companies are adjusting to a multi-generational and diverse workforce.
- + As job requirements evolve rapidly, there's a shift from traditional qualifications to skills-based hiring.
- + **Mental health, work-life balance**, and overall well-being have become critical priorities, leading to changes in how organizations support and retain employees.



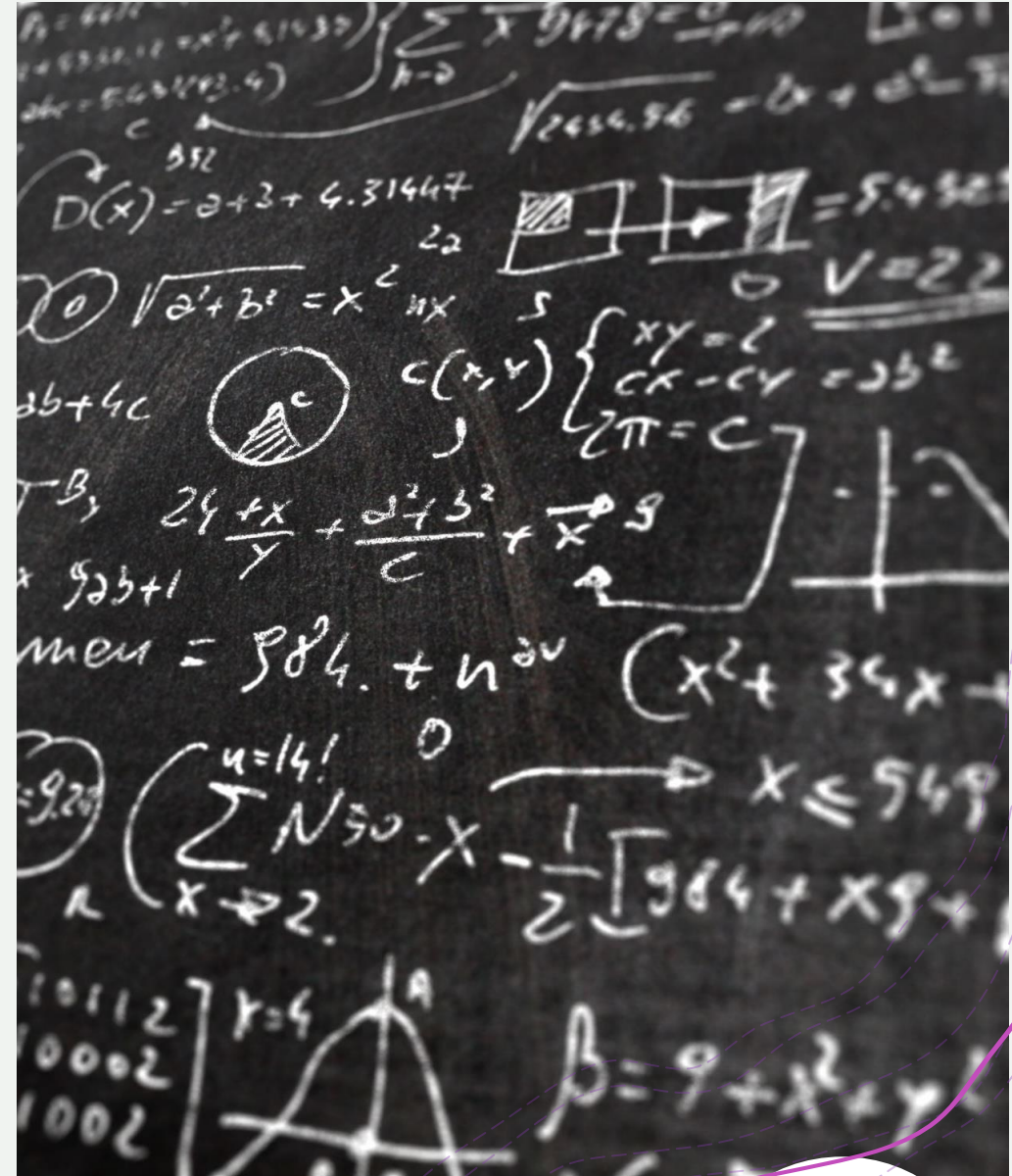
# Artificial intelligence



- + Artificial intelligence (AI) deals with the creation of intelligent systems or bots, that can reason, learn, and act autonomously like humans.
- + Common AI techniques include machine learning, natural language processing, and computer vision.
- + AI application include flying a plane, autonomous vehicle, medical diagnosis, IoT, ChatGPT.
- + AI has the potential to revolutionize many aspects of our lives, including the way we work.

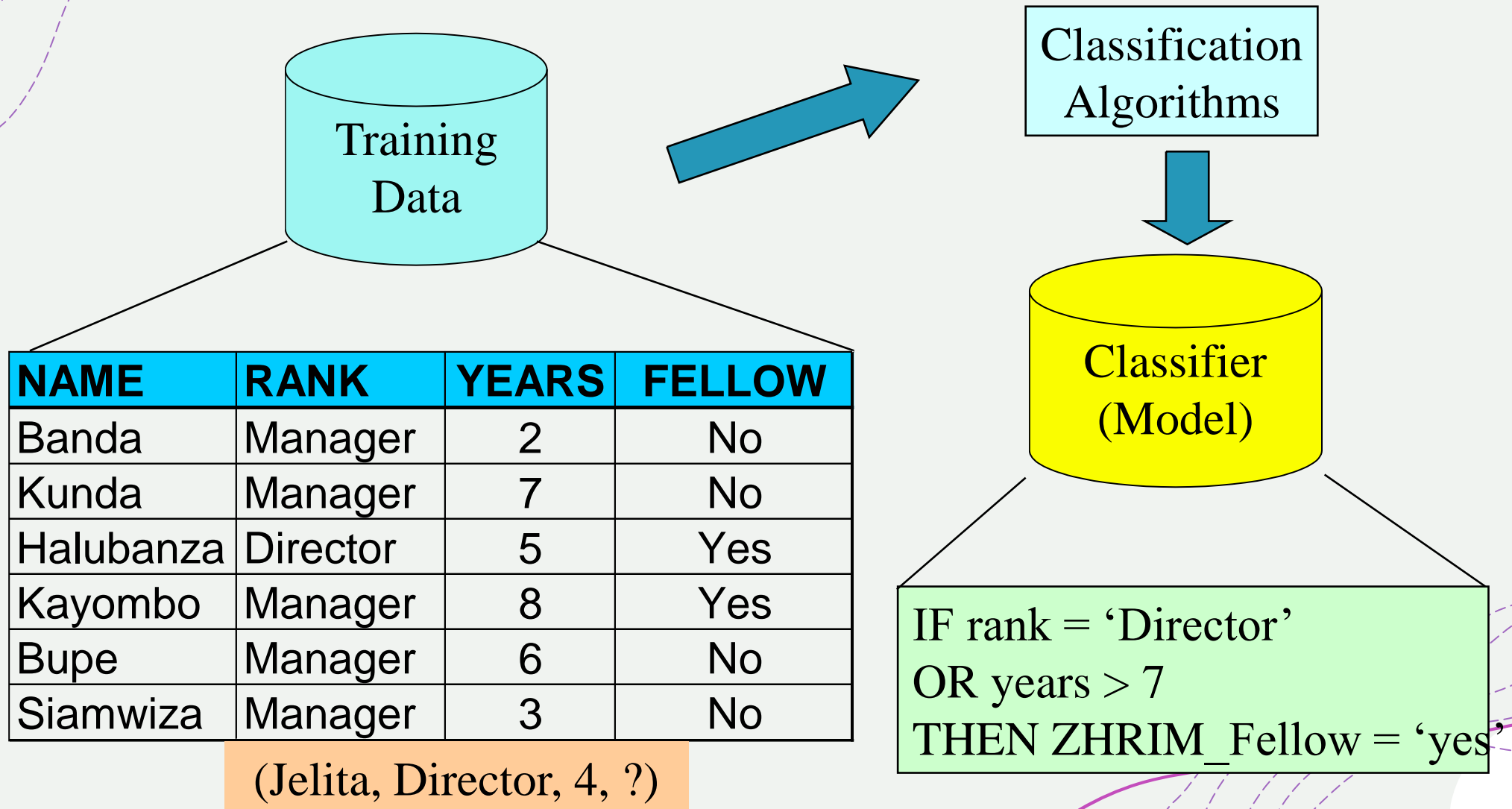
# Machine learning

- + Machine Learning (ML) is development of algorithms and models that enable computers to learn from and make predictions or decisions based on data.
- + **Supervised Learning**, the algorithm learns from categorized or labeled data, predicting outcomes based on existing examples.
- + **Unsupervised learning** discovers patterns and relationships within data that has not been categorized or labeled with specific outcomes or classifications.
- + **Reinforcement Learning** agents act in a known or unknown environment to constantly adapt and learn based on collected experience (rewards/ punishment)





# Machine Learning example



# Machine learning- loan data example

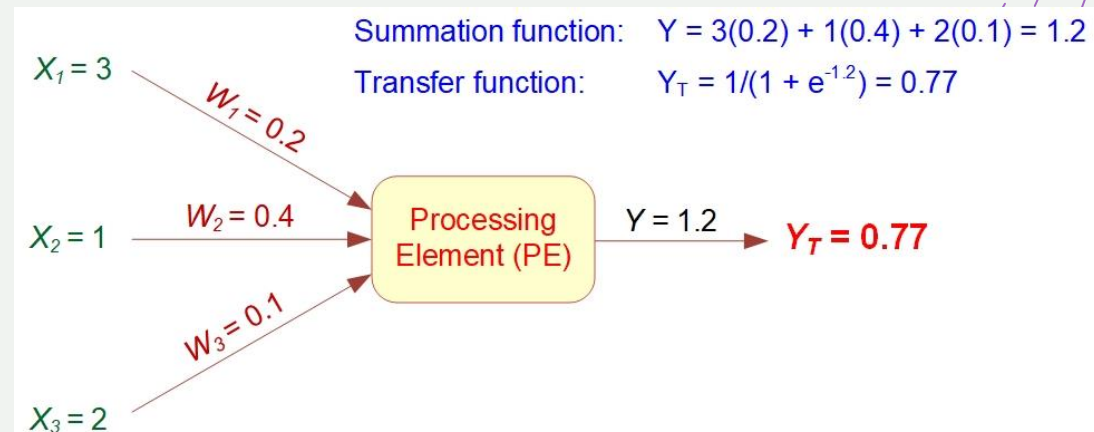
Approved or not

ID	Age	Has_Job	Own_House	Credit_Rating	Class
1	young	false	false	fair	No
2	young	false	false	good	No
3	young	true	false	good	Yes
4	young	true	true	fair	Yes
5	young	false	false	fair	No
6	middle	false	false	fair	No
7	middle	false	false	good	No
8	middle	true	true	good	Yes
9	middle	false	true	excellent	Yes
10	middle	false	true	excellent	Yes
11	old	false	true	excellent	Yes
12	old	false	true	good	Yes
13	old	true	false	good	Yes
14	old	true	false	excellent	Yes
15	old	false	false	fair	No

# ChatGPT and Google Gemini

- + ChatGPT has popularized artificial intelligence
- + ChatGPT or Google Gemini or Meta AI (Llama) are language model designed to generate responses based on patterns in the data it was trained on.
- + ChatGPT is based on the GPT (Generative Pre-trained Transformer) architecture developed by OpenAI.
- + GPT models are based on a deep learning approach called transformers, which have revolutionized natural language processing tasks.

Deep learning is about depth of knowledge capture and representation, and automatic feature extraction eg Artificial Neural Network



# Benefits of AI and ML

- + Many benefits, focus on two areas
- + Enhanced Efficiency and Productivity
- + Improved Personalization and Customer Experience



# AI enhances efficiency and Productivity

- + AI can **automate routine and repetitive tasks**, freeing up human resources for complex, strategic work.
- + Machine learning **accelerates decision making** by processing large data and providing insights quickly.
- + AI systems work continuously (**24/7 operations**) without fatigue, ideal for customer support, monitoring, and maintenance.
- + Automating data entry, calculations, and routine tasks thus **reducing human error**.
- + Predictive analytics helps to optimize resource allocation, reducing waste and costs.



# AI improves Personalization and Customer Experience

- + Machine learning powers **recommender systems** (e.g., in streaming and e-commerce) for a customized user experience.
- + AI anticipates customer needs, improving satisfaction with proactive support.
- + AI support **sentiment analysis and assess** customer feedback, enabling real-time adjustments and better engagement.
- + Machine learning refines and provide for **target marketing campaigns** by analyzing consumer behavior and preferences.
- + AI chatbots and virtual assistants provide instant responses, enhancing user interaction eg ChatGPT.



# AI and ML application in HR functions

1. Recruitment and staffing
2. Staff Development, Training and succession planning
3. Performance management
4. Compensation and benefits
5. Employee relations
6. Compliance and legal
7. Health and safety
8. HR Operations and improved decision making

# Recruitment and staffing

- + AI-powered applicant tracking systems (ATS) can be used to **automate CV screening and shortlisting**.
- + AI-powered chatbots can be used in the initial stages of candidate interaction and conduct preliminary interviews,
- + This method is more transparent, can build trust and **minimize corruption and nepotism**.
- + AI predictive analytics using data can predict candidate success and retention based on past hiring trends.
- + AI can be used develop **strategic workforce planning** indicating possible resignations, retirement, death, etc





# Staff development, training and succession planning

- + AI-powered agents or bots can be deployed on the HR system to collect JDs and PMS results of each employee and **produce TNA report**.
- + Staff training can be conducted according to priorities identified by the **AI-powered recommender system** and monitor employee progress in training programs.
- + AI can provide **personalized learning experiences** by adapting to the specific needs and learning styles of individual students (Damaševičius, 2023)
- + AI assesses skills across the workforce to identify potential future leaders, analyze performance and growth potential, **assisting in succession planning**.



# Performance management system (PMS)

- + AI tools can be used to **automate the PMS process** and track employees' progress toward goals and align them with organizational objectives.
- + AI can collect real time data on **key performance indicators (KPIs)** from various platforms, such as project management tools and communication channels, eg Trello. This can facilitate **timely reviews and feedback** instead of waiting for end of year assessments.
- + ML algorithms **reduce bias and provide objective evaluations** by focusing on data-driven performance indicators.



# Compensation and benefits

- + Use AI to conduct **market analysis** to analyze industry data and identify competitive compensation packages for different roles.
- + AI can be used to **conduct equity analysis** to detect and address pay disparities related to gender, race, or other attributes.
- + AI can be used for **sentiment analysis** or employee surveys to analyze employee feedback to understand their satisfaction with compensation and benefits.
- + AI can be used to **simulate different compensation scenarios** to understand their impact on the budget and workforce.





# Employee relations

- + AI uses **sentiment analysis** to assess employee feedback and surveys to gauge morale and engagement.
- + Machine learning flags **potential conflicts or dissatisfaction** based on communication patterns.
- + AI-driven employee surveys can collect employee feedback, identifying areas for improvement.

# Compliance and legal

- + Automate the review and update of HR policies to align with current legal requirements.
- + Use AI to review and categorize HR documents, making it easier to retrieve and manage compliance-related information (**document management system**).
- + Automate the review and management of employment contracts to ensure they comply with legal standards.
- + Develop AI-driven **personalized and interactive training programs** to educate employees about compliance and legal requirements.
- + Automate case management processes to track and manage legal issues efficiently as well as assist in legal research.
- + Algorithms identify and **flag potential biases in hiring, evaluations, promotions and compensation.**

# Health and safety

- + AI-driven sensors or IoTs can **continuously monitor the workplace** for potential hazards, such as toxic gases, high temperatures, or unsafe conditions to prevent accidents
- + Using predictive analytics, AI can **analyze historical safety data to identify patterns and predict potential risks**, allowing for proactive measures to mitigate these risks
- + Machine learning algorithms can detect unsafe behaviors and provide real-time alerts or interventions to correct them eg at airport these have been implemented
- + IoT and wearable devices equipped with AI can **monitor employees' health metrics**, such as heart rate and stress levels, to ensure their well-being.
- + Machine learning models can assist in developing and **refining safety policies** and procedures as well as provide insights into workplace safety trends and help management make informed decisions

# HR Operations and decision making

- + AI can **automate repetitive and time-consuming tasks** for example shortlisting of candidates, employee surveys.
- + ML can be used in risk assessment and help institutions to understand risk exposure and recommend mitigation measures.
- + AI can provide **personalized services** to staff using chatbots or virtual assistants to automate and support HR functions
- + AI can help HR practitioners make better decisions by analyzing data and identifying and **forecast future trends, patterns** and events, eg Union negotiations.



# Effects of AI on workforce evolution

- + Workforce evolution refers to the ongoing changes in the structure, skills, demographics, and expectations of the labor force over time.
- + AI is reshaping the workforce and will lead to new ways of working and managing talent.
- + HR practitioners should not remain rigid but must adapt and use flexible work models as organizations integrate AI-driven solutions.
- + There are many **opportunities and challenges**





# Effects of AI on workforce evolution - Opportunities

- + AI automates repetitive tasks, reducing the need for human intervention in areas like data entry, customer service, and manufacturing **thus enhancing efficiency and productivity**.
- + AI's role in facilitating remote work allows for more flexible work schedules, **supporting better work-life balance**.
- + AI-driven tools like **bots and virtual assistants**, project management platforms, and collaborative software enable efficient remote work.



# Effects of AI on workforce evolution - Opportunities

- + AI can analyze large amounts of data to predict consumer preferences, leading to more **personalized services and better decision making**
- + AI changes the scope of many jobs, with employees shifting from task-focused roles to **strategic and decision-making functions**, problem solving and creative work.
- + AI **creates new job roles** such as AI specialists, data scientists, and robotics engineers. These roles require new skills and offer opportunities for those who upskill



# Effects of AI on workforce evolution - Challenges

- + AI and automation of routine tasks can **lead to job losses**, especially in sectors like manufacturing and data entry
- + AI requires investing in technological infrastructure
- + The rapid pace of technological change requires a shift toward lifelong learning and adaptability in the workforce. To stay relevant there are **cost for upskilling and reskilling** of staff
- + Organizations need to adapt their structures and cultures to integrate AI effectively.
- + The use of AI raises **ethical questions and concerns** about data privacy and security. Lack of quality datasets on Zambia.



# Conclusion

- + Artificial intelligence (AI) can be used to automate most of the HR systems and procedures thus improving work efficiency and productivity.
- + AI such as ChatGPT, chatbots, IoT are here with us, and we must not ignore them but exploit them like we have done with mobile phones
- + Technological changes like AI are reshaping how work is done, who does it, and what new work looks like and as HR practitioners you must adapt to stay relevant and competitive
- + To benefit from AI there is need for collaboration among HR practitioners and share your experiences
- + Aim to implement at least one AI solution to support the HR function in the coming year and share at the next conference

# Thank you



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# AI challenges and solutions

Open issues/ Challenges	Possible solutions
<b>Lack of quality datasets on Zambia</b>	<ul style="list-style-type: none"><li>• Collaboration and data sharing between researchers, governments, and private organizations can help to improve the quality of datasets in Zambia.</li><li>• Using modern data collection techniques eg Internet of things</li></ul>
<b>Lack of expertise in AI and ML</b>	<ul style="list-style-type: none"><li>• Building the capacity in AI and researchers through mentorship to develop high-quality datasets is essential for the success of AI and ML in Zambia.</li><li>• Collaboration among HR practitioners</li></ul>
<b>Jobs will be done by AI bots and humanoids</b>	<ul style="list-style-type: none"><li>• Lobby with politicians and the public to sensitize them on benefits of AI and ML</li><li>• Involve key stakeholder (Davenport, 2018).</li><li>• Piloting and incremental approach (Yekini, Inyang-Udoh and Doherty, 2016).</li><li>• Employ change management strategies to address resistance, identify change agents, and manage the transition</li></ul>
<b>Lack of technological infrastructure</b>	<ul style="list-style-type: none"><li>• Use of cloud computing to reduce on the cost of infrastructure</li><li>• Resource pooling within the country for example one institution can have a super computer that is available for use by researchers</li><li>• Investing in technological infrastructure especially the Internet</li></ul>
<b>Regulatory challenges</b>	<ul style="list-style-type: none"><li>• Implement clear regulatory frameworks for AI and ML</li><li>• Increase awareness of the benefits of AI and ML</li></ul>
<b>Ethical concerns</b>	<ul style="list-style-type: none"><li>• Increase the amount of collected data</li><li>• Increase awareness of AI bias and mitigating against it</li></ul>

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