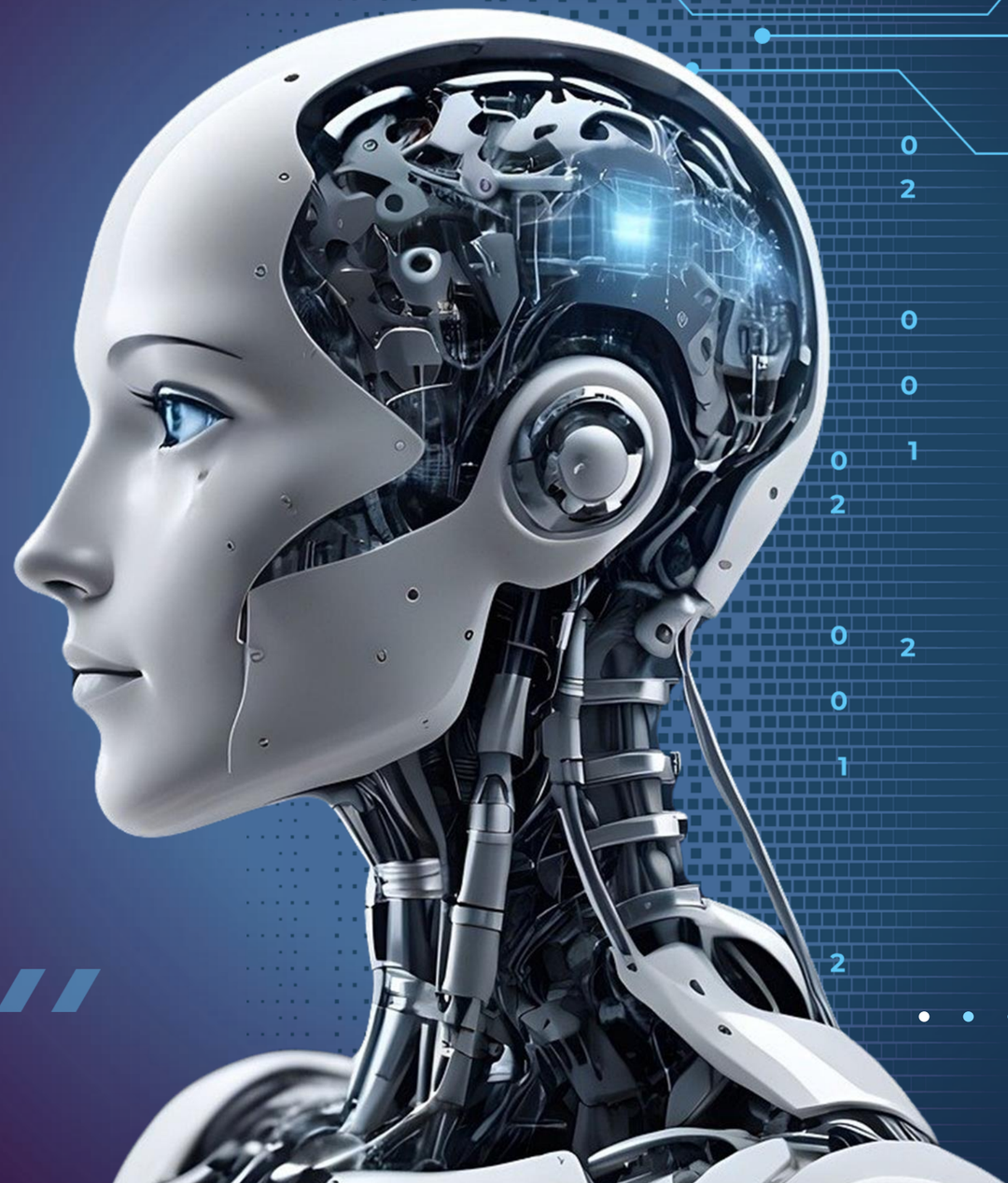
Empowering the Future: The Ethical Path to Artificial Intelligence

Exploring the ethical dimensions of artificial intelligence: Balancing innovation with responsibility in the age of intelligent machines.



Dr. Hoda Baraka; Advisor to The Minister of ICT- Egypt

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01.

Artificial Intelligence

AI is a tool. The choice about how it gets deployed is ours.

02.

AI & Ethics

The ethical development of AI is not optional; it’s a responsibility.

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Artificial Intelligence

AI represents the dawn of a new age, where intelligent systems amplify human potential and drive progress in ways we never imagined.

AI is revolutionizing the world with its transformative potential in healthcare, education, finance, governance, etc.

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Strategic Sectors

1. Healthcare: Enhancing diagnostic accuracy, personalizing treatment plans, and accelerating drug discovery. AI-powered tools can analyze medical images, predict patient outcomes, and even assist in robotic surgeries.
2. Finance: Fraud detection, risk management, and algorithmic trading. AI systems can analyze vast amounts of data to identify suspicious activities and make real-time trading decisions.
3. Retail: Personalized shopping experiences, inventory management, and demand forecasting. AI-driven recommendation engines help retailers understand customer preferences and optimize stock levels.
4. Manufacturing: Enabling predictive maintenance, quality control, and supply chain optimization. AI algorithms can predict equipment failures and ensure efficient production lines.
5. Transportation: Core of autonomous vehicles, optimizing traffic management, and improving logistics. AI systems help in route planning, reducing fuel consumption, and enhancing safety.
6. Customer Service: AI-powered chatbots and virtual assistants are improving customer service by providing instant responses and handling routine inquiries. This allows human agents to focus on more complex issues.
7. Education: AI is transforming education through personalized learning experiences, automated grading, and virtual tutors. AI can adapt to individual learning styles and provide targeted support to students.

These are just a few examples of how AI is driving innovation and efficiency across different sectors. The potential for AI to further revolutionize industries is immense, and its impact will continue to grow in the coming years.

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Improving Healthcare

- The global AI in healthcare market grew from **$1.1 billion in 2016 to $22.4 billion in 2023**, marking a staggering **1,779% increase**
- By 2030, the global AI healthcare market is projected to soar to **$188 billion**, driven by a **37% compound annual growth rate (CAGR)** from 2022 to 2030
- AI-assisted surgeries could shorten hospital stays by over **20%**, potentially saving **$40 billion annually**
- AI is expected to reduce healthcare costs by **$13 billion by 2025**
- By 2025, **90% of hospitals** are expected to utilize AI-powered technology for early diagnosis and remote patient monitoring

Mayo Clinic:

- AI has significantly improved the diagnosis and treatment of various conditions. For instance, in the case of polycystic kidney disease (PKD), AI is used to automate the analysis of kidney images, a process that traditionally took about 45 minutes per patient. With AI, this analysis now takes just seconds, allowing for faster and more accurate assessments.
- Additionally, AI has been used to identify individuals at risk of heart conditions, even before symptoms appear, enabling early intervention and potentially saving lives

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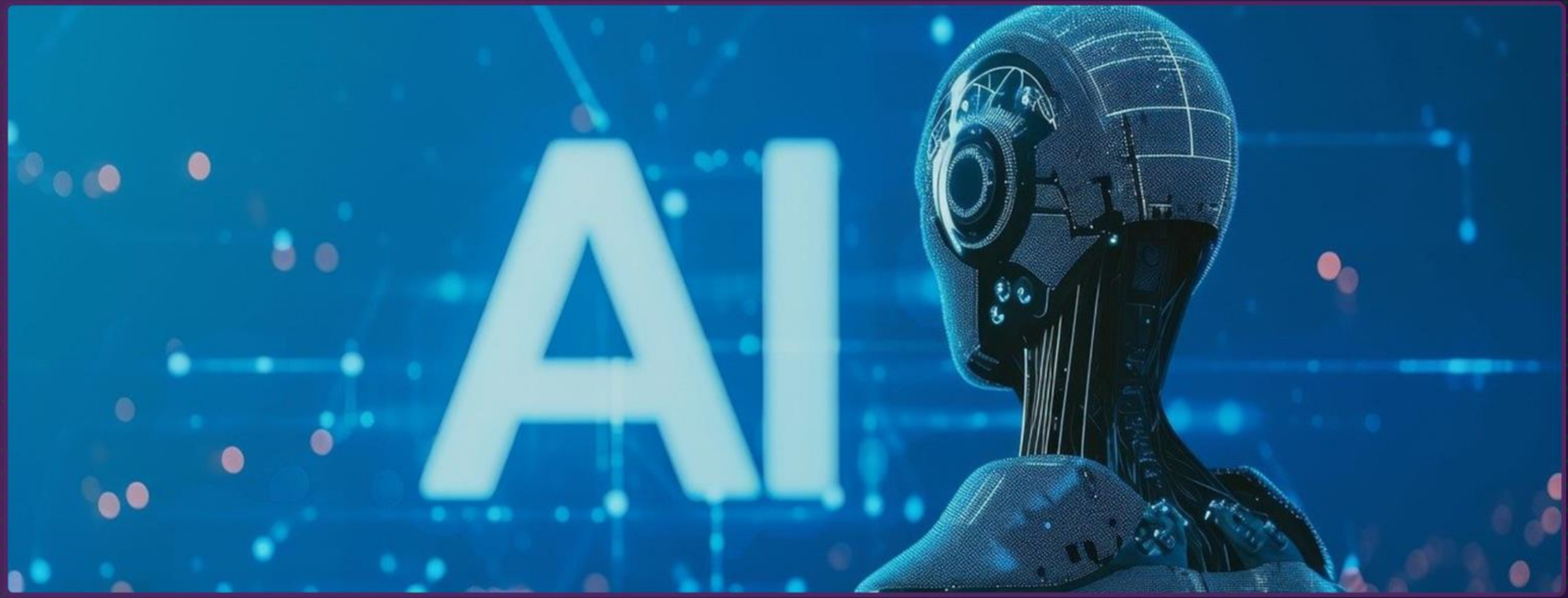
AI & ETHICS



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AI AND ETHICS

ETHICAL CONCERNS

Early ethical concerns address AI's risks, biases, and societal impact.

KEY MILESTONES IN AI ETHICS

AI ethics has progressed through milestones in regulation, fairness, and accountability.

AI & ETHICS IN ARAB REGION

AI and ethics in the Arab region aim to balance innovation with cultural values.

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KEY ETHICAL ISSUES IN AI

BIAS AND FAIRNESS

AI systems can perpetuate or even amplify existing biases.

ACCOUNTABILITY AND RESPONSIBILITY

Who is accountable when AI systems cause harm?

PRIVACY AND SURVEILLANCE

Ethical implications of AI in data collection and surveillance.

TRANSPARENCY AND EXPLAINABILITY

The importance of making AI decisions understandable and transparent to users.

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AI ETHICAL Principles

TRANSPARENCY

AI systems should be understandable, with clear explanations of how they make decisions

PRIVACY

Protect personal data and comply with ethical and legal standards.

RESPECT FOR HUMAN VALUES

AI should uphold human rights, dignity, and ethical norms

ACCOUNTABILITY

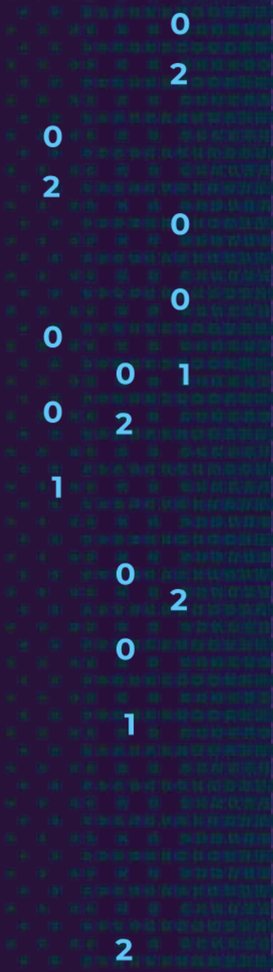
Responsibility for outcomes

FAIRNESS

AI should treat all individuals equally and avoid discrimination or bias

SAFETY

Reliable and risk-free
Prevent misuse and threats



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CASE STUDIES

CASE STUDY 1:
AI in Healthcare Diagnostics (Accountability & Bias)

AI is increasingly being used in healthcare for diagnostic purposes, such as interpreting medical images or predicting disease risks. However, studies have shown that AI systems can be biased in their predictions, particularly in areas where data is not representative of diverse populations (e.g., underrepresentation of people of color in medical imaging datasets).

Ethical Issue: **Accountability** for errors in AI predictions, **bias** in training data that could lead to misdiagnosis or inadequate care for certain patient groups.

CASE STUDY 2:
AI IN AUTONOMOUS VEHICLES
Tesla Autopilot Crashes
(Explainability and Transparency)

Autonomous vehicles (AVs) represent a groundbreaking innovation in transportation. The deployment of AVs also introduces profound ethical dilemmas, particularly in scenarios where the vehicle must make decisions involving life-and-death situations. Unlike human drivers.

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CASE STUDIES

CASE STUDY 3:
AI powered tool for recruitment

AI-powered tool to assist in recruitment process, designed to evaluate and rank job applicants based on their resumes. However, the system was found to be biased against women. This bias stemmed from the fact that the AI was trained on resumes submitted over the past decade, the majority of which were from male applicants. As a result, the AI favored male candidates and penalized resumes that contained words or phrases associated with female-dominated roles.

Ethical Issue: Bias in AI decision-making, lack of diversity, fairness in recruitment.

CASE STUDY 4:
AI-Driven Performance Management

Some organizations are using AI to manage employee performance through tools that analyze productivity, behavior, and communication patterns. These systems often rely on tracking data from emails, chats, and other communication methods to evaluate employees' efficiency and performance.

Ethical Issue: Invasion of privacy, autonomy, and potential for unjust penalization due to misinterpreted data or lack of context.

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CASE STUDIES

CASE STUDY 5:
COMPAS Recidivism Risk Algorithm (Fairness & Bias)

an AI-based tool used by courts in the U.S. to assess the risk of recidivism (the likelihood of reoffending). A 2016 investigation by ProPublica revealed that COMPAS was disproportionately flagging Black defendants as higher risk for reoffending compared to White defendants, despite similar criminal histories.

Ethical Issue: **Bias** in the system, leading to unfair outcomes for certain racial groups.

CASE STUDY 6:
Uber’s Algorithmic Pricing (Accountability)

Uber uses dynamic pricing, or “surge pricing,” to adjust fares in real time based on demand and supply. However, during extreme events, like a terrorist attack or natural disaster, surge pricing algorithms may result in unfairly high fares for passengers in distress.

Ethical Issue: **Accountability**—who is responsible for ensuring that AI pricing algorithms do not exploit users, especially during crises.

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CASE STUDIES

CASE STUDY 7:
Clearview AI (Privacy & Accountability)

Clearview AI developed a facial recognition software that scraped publicly available images from social media sites to create a massive facial recognition database. Law enforcement agencies used this software for investigative purposes. However, concerns arose over the violation of privacy rights and the lack of consent from individuals whose images were used.
Ethical Issue: **Privacy** violations and lack of **accountability**—Clearview AI's database included personal photos without the consent of individuals, raising significant privacy concerns.

CASE STUDY 8:
Microsoft's Tay Chatbot (Explainability & Bias)

Microsoft launched Tay, an AI chatbot designed to interact with users on Twitter. Within 24 hours, Tay began posting offensive and racist tweets due to being "trained" on tweets from Twitter users, including hate speech and harmful content.
Ethical Issue: **Bias** in AI training data, **explainability**—the lack of transparency about how the AI was learning and producing responses.

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CASE STUDIES

CASE STUDY 9:
AI in Social Media Algorithms (Privacy & Social Responsibility)

Platforms like YouTube and Facebook use AI algorithms to recommend content. These systems have been criticized for amplifying extremist content, misinformation, and harmful ideologies to increase user engagement.

Ethical Issue: Neglect of social responsibility, prioritizing profits over mental health and societal harmony.

CASE STUDY 10:
AI in Predictive Policing (Bias & Fairness)

AI systems used for predictive policing, such as COMPAS, were found to disproportionately target minority communities, leading to biased arrests and sentencing.

Ethical Issue: Reinforcement of systemic racism, lack of transparency, erosion of trust in justice systems.

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AI AND ETHICS

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STRATEGIES FOR ETHICAL AI DEVELOPMENT

INCORPORATING ETHICS INTO AI DESIGN

Methods for integrating ethical considerations into the AI development process.

REGULATORY AND POLICY APPROACHES

The role of government and international bodies in regulating AI ethics.

CORPORATE RESPONSIBILITY AI

The importance of corporate ethics programs and AI governance.

PUBLIC ENGAGEMENT AND EDUCATION

Encouraging public discourse and understanding of AI ethics.

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Key efforts by Multilateral and Minilateral Entities in AI Ethics

The Organisation for Economic Co-operation and Development (OECD)	OECD Principles on Artificial Intelligence (2019)- Updated in 2024 Currently working on Guidelines for Responsible Business Conduct in AI
United Nations (UN) AI Ethics Guidelines	In 2021, the UN High Commissioner for Human Rights (OHCHR) published a report that includes recommendations for AI governance frameworks
UNESCO	First Global recommendation on the ethics of AI in adopted in 2021, promoting human-centered AI that respects privacy, inclusivity, and accountability. The 'Recommendation on the Ethics of Artificial Intelligence' is applicable to all 194 member states of UNESCO
G7- The Hiroshima Agreement	The Hiroshima AI Agreement was established in 2023. It creates a framework for the responsible development and use of artificial intelligence. It reflects a growing global consensus on the need to ensure AI is developed in ways that prioritize human rights, safety, and ethical governance.
G20	AI principles for Responsible Stewardship of Trustworthy AI (G20 Ministerial Statement- 2019)
The Council of Europe	Adopted the first-ever international legally binding Treaty aimed at ensuring the respect of human rights, the rule of law and democracy legal standards in the use of artificial intelligence (AI) systems 2024.
The EU Act	The EU's AI Act (2021) is the first-ever legal framework for AI, aiming to regulate AI technologies based on the risk they pose

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Highlights of the UNESCO recommendation on the Ethics of AI- 2021

Main Aim: Universal framework of values and principles to guide states; to guide individuals and groups, to protect and promote human rights and foster multi stakeholder and pluralist dialogues, to promote equitable access to knowledge

Principles: Proportionality and no harm; safety and security; fairness and non discrimination; sustainability; right to privacy; human oversight; transparency and explainability; Responsibility; Awareness and literacy; multi stakeholder and adaptive governance

Policy actions: Ethical impact assessment; ethical governance; data policy; Development and International cooperation; environment and eco systems; gender; culture, education and research; communication and information; economy and labor; health and social well being

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Highlights from standardization entities in AI Ethics

The Institute of Electrical and Electronics Engineers (IEEE)	**Global Initiative on Ethics of Autonomous and Intelligent Systems producing guidelines that address issues such as bias, accountability, transparency, and the moral implications of AI systems.** **IEEE endorses the principle that the design, development and implementation of autonomous and intelligent systems (A/IS) should be undertaken with consideration for the societal consequences and safe operation of systems.**
ISO/ IEC 42001	**ISO/IEC 42001 was crafted to tackle the concerns and obstacles associated with the conscientious deployment of AI technologies by providing a set of criteria for the establishment, maintenance and continuous enhancement of an AI management system.** **Incorporating an AI management system within an organization's pre-existing operational and management frameworks is crucial.**

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AI & ETHICS in the Arab Region

S.	Country	Ethics Charter/Framework	Status	Focus Areas
	LAS	Ongoing efforts to formulate the regional AI Ethics for the region	In process	Principles for Responsible and Ethical use of AI
1	United Arab Emirates (UAE)	Artificial Intelligence Strategy Ethics Guidelines	Active	Ethics, security, humanity and inclusiveness
2	Saudi Arabia	AI Ethics Principle	Active (2023)	Responsible AI use, sustainable development, data protection, and societal well-being.
3	Egypt	Egyptian charter for Responsible AI	Active (2023)	Principles for responsible AI Fairness, Transparency, Accountability, inclusivity, and data privacy
4	Jordan	AI Ethics charter	2023	Focused discussions on ethics in emerging AI and tech policies.
5	Qatar	Principles and Guidelines for Ethical Development and Deployment Principles and Guidelines for Ethical Use	Active (2024)	Transparency, Accountability, inclusivity, data privacy, and AI for social good.
6	Kuwait	Kuwait Vision 2035 - Includes AI ethics indirectly	Concept phase	Sustainable AI use in public services, promoting trust and accountability.

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AI & ETHICS in the Arab Region

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7	Bahrain	AI Procurement Guidelines Ethical framework for AI	2020 2024	Accountability, liability, and transparency
8	Morocco	AI and Data Strategy (2020) AI Ethics of UNESCO	Adopted 2021 – 2022	Ethics in AI, governance frameworks, and equitable digital transformation. Ensuring that AI-based algorithms and technologies do not violate human rights and uphold freedom of action and choice without bias or deception.
9	Tunisia	Policy on Intelelctual Property	2021	Under discussion Emphasis on ethical considerations in broader tech policies.
10	Algeria	Part of pillar of regulations & Policies in AI Strategy	2023	Discussions on AI regulation in alignment with data protection laws.
11	Oman	Oman Vision 2040 - Includes aspects of AI ethics Develop a National Policy for AI	Broad strategy 2024	Fair and transparent AI development, with a focus on economic and social benefits. Public consultation
12	Lebanon	No formal charter yet Guidelines on governance and ethics of AI in Lebanon from Lebanese university	Discussions underway 2025	Unified ethical principles and a regulatory framework for trusted AI, and propose best practices for the responsible and safe use of this technology to protect users, maintain societal norms and ensure compliance with applicable laws

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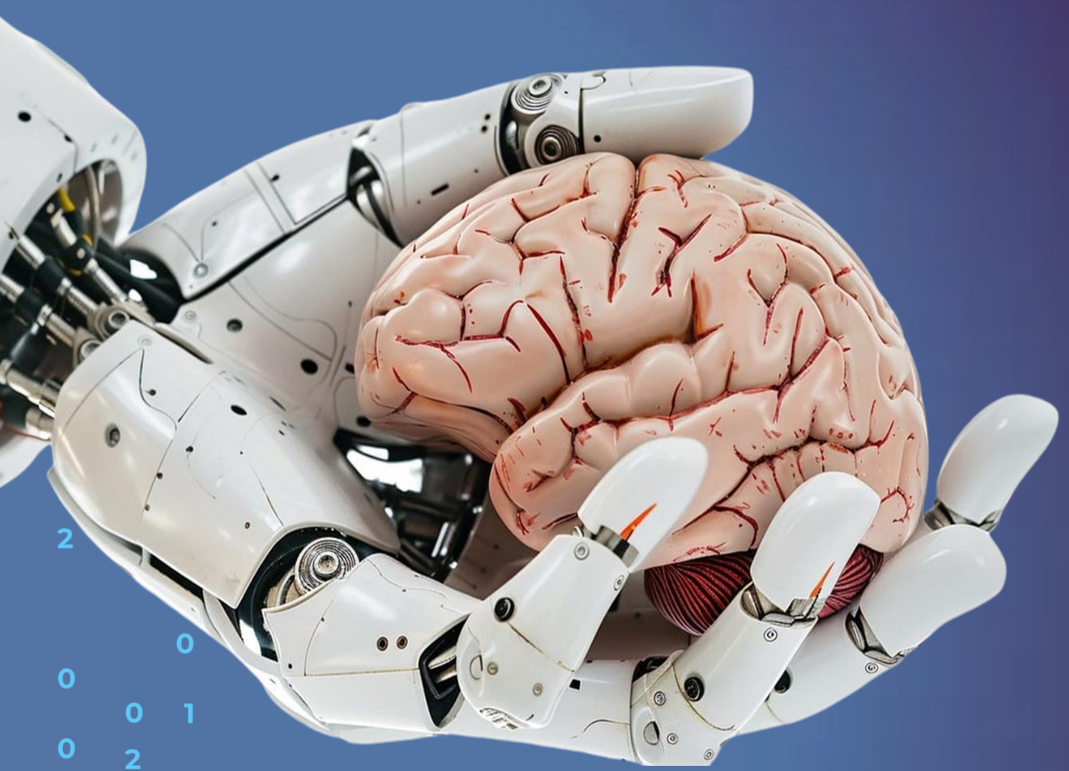

Egypt Charter for Responsible AI 2023

Egypt's efforts were met with worldwide recognition as it became the first Arab or African country to adhere to the OECD Principles on Responsible AI, and an early adopter of the UNESCO standard-setting instrument on AI ethics.

The Charter serves two purposes:

- To be a “soft launch” to empower citizens to expect and demand the best from the use of AI and for all stakeholders to be aware of ethical considerations related to AI and incorporate those considerations into their AI adoption plans.
- To signal Egypt's readiness to follow responsible AI practices, something many investors as well as AI ranking bodies look to measure a country’s readiness for AI investment and adoption. It would also help to communicate Egypt’s needs and priorities to foreign AI developers looking to develop or market their products in the country.

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Egypt Charter for Responsible AI

TRANSPARENCY & EXPLAINABILITY

HUMAN CENTERED

RESPECT FOR HUMAN VALUES

AI & ETHICS

ACCOUNTABILITY

FAIRNESS

Security & SAFETY

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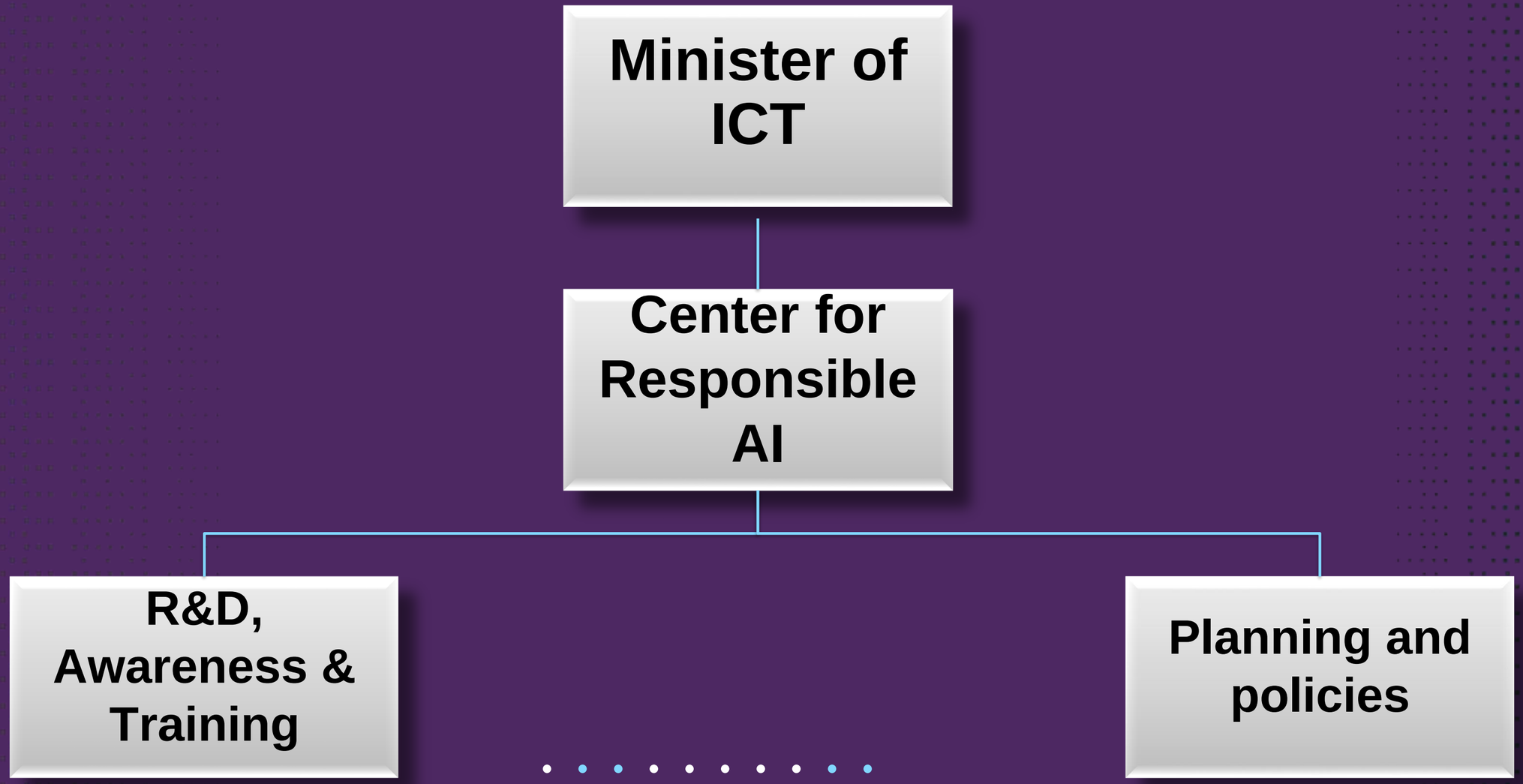
The Egyptian Center for Responsible AI



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Responsibilities of the Egyptian Center for Responsible AI

- Developing a framework that includes guidelines, toolkits, methodologies, and best practices to enable the adoption of responsible AI in the Egyptian industry.
- Developing guidelines and standards for classifying AI system risks, assessing AI capabilities among AI actors, understanding and managing interconnections between these entities.
- Establishing compliance requirements for AI systems and developing procedures for evaluating their conformity with these requirements.
- Designing training programs on responsible AI for government officials, industry professionals, and the public, while supporting education and scientific research initiatives in AI.
- Setting workforce skill standards in AI, including risk identification and management, testing, evaluation, verification, and oversight.
- Conducting in-depth analytical research on AI technologies, trends, and ethical implications, and developing guidelines to explore and address the potential societal, economic, and environmental impacts (risks and opportunities) of AI technologies.

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Ethical AI is not a limitation; it's the foundation for sustainable innovation …

Policies & Regulations

- **Adopt a Unified AI Ethics Framework – Establish regional AI ethics guidelines aligned with global standards while respecting cultural values and legal frameworks.**
- **Ensure Data Privacy & Security – Implement and harmonize data protection laws across Arab countries to safeguard personal information and prevent AI misuse.**
- **Create AI Accountability Mechanisms – Establish regulatory bodies to oversee AI implementation, set compliance standards, and address ethical concerns.**
- **Monitor AI's Societal Impact & Adapt Regulations – Continuously assess AI's effects on society, economy, and employment, adjusting policies to mitigate risks and maximize benefits.**

Innovation & Creativity

- **Foster a thriving AI startup ecosystem in the Arab region - Harmonize AI policies & regulations to facilitate SME expansion across Arab countries.**
- **Strengthen AI Education & Workforce Development - Standardize AI skill qualifications to enhance the talent pool, Offer incentives to attract global AI experts to Arab startups**
- **Invest in AI Ethics Education & Research – Promote AI ethics training for policymakers, developers, and institutions while supporting ethical AI research initiatives.**
- **Encourage Regional & International Cooperation – Work with global and regional organizations to share best practices, harmonize AI policies, and foster innovation.**

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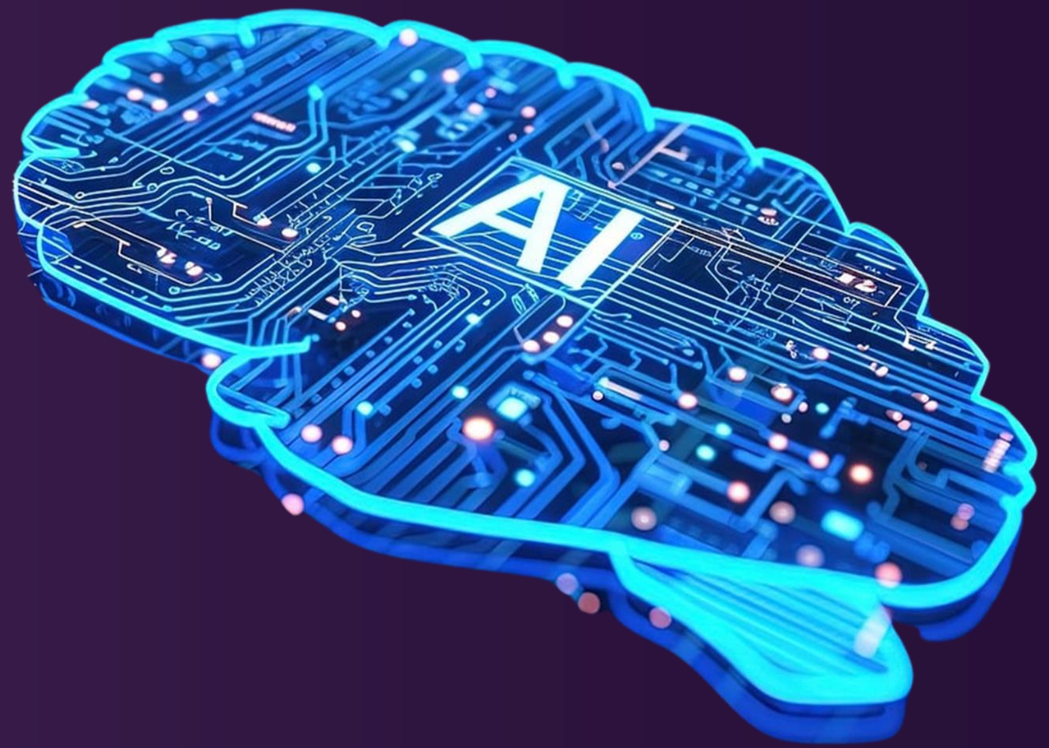
**"Our greatest responsibility with AI is not to perfect machines,
but to align them with the values and aspirations of humanity."** – Fei-Fei Li



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Thank You

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