

ARTIFICIAL INTELLIGENCE AND THE FUTURE OF ARABIC RHETORIC

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Abstract: The world is witnessing the era of Artificial Intelligence (AI) - a new epoch where modern smart technologies hold the primary influence. Following the significant leap in November 2022 with the release of ChatGPT, followed by other Large Language Models (LLMs) such as Google Bard (now Gemini), it has become certain that these technologies will profoundly impact all societal sectors, particularly education. This study reveals that the current state of Arabic rhetoric within AI systems is lamentable and falls short for students and researchers. This is primarily due to a deficiency in supplying these systems with comprehensive rhetorical sciences and pedagogical methodologies. The study posits with scientific certainty that AI will dominate "Educational Rhetoric" - the systematic approach established by Imam al-Sakkaki - potentially replacing instructors of this method in the near future.

Keywords: Artificial Intelligence, Future of Arabic Rhetoric, Critical Vision

Introduction

For many years, the dream of creating machines capable of thinking, learning, and acting intelligently has occupied the minds of those concerned with the technological future. This dream was manifested in ancient myths and legends, which told tales of robotic creatures resembling humans in their intelligence and superhuman abilities.

In the modern era, scientists have dedicated themselves to finding real means and practical ways to create advanced intelligent technologies. Developments in computer science have contributed to significant leaps, paving the way for the emergence of the first artificial intelligence programs and systems in the 1950s.

These early systems were extremely simple, yet they represented an important shift toward achieving that ancient human dream. Through continued effort and scientific research in technological development, these modern intelligent technologies have become more complex, capable, and skilled.

We can identify several industrial revolutions that humanity has passed through, each of which changed the face of life and triggered massive societal transformations:

The First Industrial Revolution: Witnessed the shift from manual labor to mechanized labor and steam engines in the 18th century.

The Second Industrial Revolution: Occurred in the second half of the 19th and early 20th centuries, bringing massive technological shifts with electricity, automobiles, and the establishment of railways.

The Third Industrial Revolution: Taking place in the second half of the 20th century, known as the revolution of information, technology, communications, and computing.

The Fourth Industrial Revolution: This current revolution is based on Artificial Intelligence (AI), Big Data analysis, 3D printing, and high-capacity machines. It is a profound revolution with massive societal changes and impacts on international relations - scientifically, economically, and socially.

Artificial Intelligence: Definition and Origins

The sun of this influential technological newcomer has risen as one of the most vital fields of computer science. It is a multifaceted field - so vast that its research, studies, and techniques cannot be contained in a single book. It works on developing and updating programs and systems to possess precise, intelligent capabilities that mimic human intelligence.

Definitions vary depending on the perspective, so there is no single, specific definition. It is often regarded as:

"The study of intelligent behavior in humans, animals, and machines, representing an attempt to find ways to introduce such behavior into industrial machines... AI is considered one of the most difficult and controversial subjects for all of humanity."

Linguistic Analysis of the Term

The term consists of two words: "Intelligence" and "Artificial" (or Industrial).

Intelligence (Dhakā'): In Arabic dictionaries like Lisan al-Arab, it means "sharpness of the heart" and "quickness of insight." It implies penetration and sharpness. Studies prove that AI is indeed "sharp," as a single device can provide answers to an infinite number of users, technically equaling or exceeding the entire population of the Earth.

"Artificial" (Al-Iṣṭinā'ī): Derived from the verb Iṣṭana'a, which suggests affectation or imitation. This implies that the intelligence is a simulated, non-authentic trait of the machine.

"Industrial" (Al-Ṣinā'ī): This suggests that these machines possess a partial intelligence similar to humans, with a trajectory toward "General Intelligence" and self-evolution.

While "Artificial" (Iştinā'ī) may have been suitable yesterday, the term "Industrial Intelligence" (Al-Dhakā' al-Şinā'ī) is more accurate today to express the reality of this astonishing technology and its expected future development.

Origins and Development

The journey began in 1950 when the British mathematician Alan Turing posed a direct and profound question: "Can machines think?" This question was central to his famous "Turing Test," which established a computational framework for assessing machine intelligence.

A pivotal moment in the history of AI was the Dartmouth College Conference in 1956. This event gathered a significant number of scientists and researchers interested in the fields of AI and machine learning, including John McCarthy, Marvin Minsky, Allen Newell, and Herbert Simon. These figures became the pioneers who led the expansion and evolution of this field.

In 1966, the German-born polymath John von Neumann presented his theory of self-automata and regeneration, in which he compared computer architecture to the human nervous system. Following this, in 1967, Marvin Minsky published studies predicting the widespread presence and dominance of artificial intelligence. These successive academic milestones paved the way for the dazzling technological leap we see today.

The Evolution of Modern AI (2023)

Evolution is a universal journey; on Earth, everything begins in a simple form and gradually evolves into more complex structures. Human life has followed this trajectory, starting with primitive existence and advancing to the era of space travel and cosmic exploration.

The effects of this evolution are most visible in the recent technological leaps, most notably the significant development of the conversational program ChatGPT in November 2022. It appears as an intelligent human-like entity that converses, assists, and answers complex questions - even writing essays and solving mathematical problems.

In March 2023, the "GPT-4" version was released, offering greater accuracy and improved data protection. This was followed by other rapid advancements:

Bing AI: Offers highly accurate, contextually relevant answers to queries.

Copilot: Assists in content production, summarizing long emails, and suggesting replies to help complete tasks with speed and ease.

Google Bard (now Gemini): A powerful engine used to retrieve information from the internet, characterized by its breadth and diversity.

Apple's Siri: An intelligent assistant capable of adapting to user preferences, making calls, and sending voice or text messages.

DALL·E 2: A high-quality image generation tool capable of creating visual art based on text descriptions, producing up to nine images per minute according to the user's prompt.

We now live in a reality that evolves with extraordinary speed, where AI has moved from a theoretical dream to an indispensable tool for productivity and creativity.

Artificial Intelligence: Benefits and Risks

Everything in life has two sides: a bright, positive face and a dark, negative one. Just as the sun brings life but can also burn, technological evolution carries both immense benefits and potential dangers.

The current consensus defines machine intelligence as the ability to handle new situations, solve problems, and perform mental activities that humans do spontaneously. While this level of AI is manageable, the real concern lies in the future: Artificial General Intelligence (AGI). There is a fear that machines might develop self-awareness, allowing them to accept or reject human commands. Experts predict machine intelligence could eventually surpass human intelligence millions of times over, turning today's science fiction into tomorrow's reality.

These fears are shared by industry leaders. On March 29, 2023, over 1,000 experts and tech leaders called for a six-month pause on advanced AI development to establish international regulations, ensuring that technology serves humanity rather than controlling it.

The Benefits

Despite the concerns, AI offers transformative advantages:

Speed and Precision: It processes and analyzes vast datasets at a rate far beyond human capability.

Creativity: Surprisingly, AI has excelled in creative fields. In 2020, The Guardian published an editorial written entirely by an AI program.

Literary Production: It can now compose poetry by drawing on thousands of classical works.

Translation and Productivity: Advanced machine translation has doubled output quality and speed, saving time and effort on routine tasks and reducing operational costs.

The Risks and Dangers

The concerns of global experts extend beyond technology to the potential disruption of human values and societal structures:

Job Displacement: Hundreds of millions face the risk of losing their livelihoods as AI automates routine and even complex roles.

Privacy and Ethics: AI's ability to mine and analyze data poses a threat to personal privacy and can be used for surveillance. There are also concerns regarding its impact on faith, culture, and morality.

Global Disparity: Nations differ in their readiness for AI. A lack of unified international law could lead to an uncontrollable technological race.

"Hallucinations" and Misinformation: Programs like GPT-4 sometimes "hallucinate" or invent facts. Even the developers admit they do not always understand why these systems create false information.

Academic Integrity: Users in academic and scientific fields must be cautious, as AI-generated information can be misleading and sources are not always reliable.

The Human Element: It is essential to remember that human intelligence remains superior in areas of faith, emotional intelligence, and the interpretation of psychological phenomena. Without a human presence, the workplace would become a soulless assembly of machines.

The Objectives of Artificial Intelligence

The general goal of AI is to develop programs that perform multifaceted tasks requiring intelligence. Specific objectives include:

Replicating Human Models: Creating autonomous robotic entities.

Solving Knowledge-Intensive Tasks: Handling complex problems that require deep data processing.

Bridging Perception and Action: Creating a smart link between sensing and reacting.

Improving Human-Computer Interaction: Enabling machines to solve problems in a manner similar to human reasoning.

Conclusion and Ethical Responsibility

AI is a powerful tool that can be used for great good or devastating harm. This places a heavy responsibility on nations and corporations to enact international laws that prevent the misuse of this technology.

From an Islamic ethical perspective, the goal of any human endeavor should be the stewardship of the Earth (I'mar al-Ard). The Qur'an warns against corruption and the shedding of blood, emphasizing the protection of life and property. These universal values are vital today to counter any malicious intentions that might use AI to destabilize society.

AI in Education and Research

Education and scientific research remain the most critical pillars for building civilizations and driving progress. We are living in a unique era where technological evolution is reshaping social, economic, and political realities. Whether we actively participate in its creation or remain passive spectators, AI will fundamentally transform the landscape of teaching, authorship, and research.

A New Era of Distance Learning

The COVID-19 pandemic accelerated the adoption of distance learning platforms, replacing face-to-face instruction in many contexts. Post-pandemic, this model has become a permanent fixture, particularly in individual and institutional training. Modern AI techniques are now taking this further by introducing Emotional Guidance Technologies. These systems can:

- Analyze a student's emotional state through facial expressions and voice tonality.

- Monitor physiological indicators like heart rate to understand a learner's mood.

- Enable teachers to interact with students in the most effective and personalized way.

Improving Educational Systems

Research indicates that the integration of modern applications improves the educational ecosystem. AI's ability for self-evolution - learning from data to analyze and answer complex questions - makes it a high-precision tool.

Curriculum Development: International universities are increasingly relying on advanced electronic courses and software to update teaching methods.

Efficiency: Tasks that previously required immense time and effort can now be completed with significantly less cost and manpower.

Support for Special Needs: AI can identify learning difficulties and simplify materials to suit the specific needs of struggling learners.

Impact on Training and Academic Research

AI is revolutionizing the training sector by providing comprehensive, organized, and multifaceted content. It offers trainers advanced presentation tools and innovative assessment programs that align with international standards.

In the realm of Academic Research, AI's role begins at the inception of an idea. It assists researchers by:

- Generating research plans and exploring new concepts. Providing illustrative examples and practical methodologies. Optimizing the research process to save time and resources.

Future Outlook: Insights from the AI Itself

When asked about the future of education, AI models like ChatGPT and Google Bard offer consistent predictions:

- Personalized Learning:** Customizing education to the unique abilities and behaviors of each student to help them reach their full potential.

- Smart Assessments:** Developing accurate, fair evaluation systems that provide instant feedback and guidance for improvement.

- Advanced Resources:** Utilizing robots, interactive applications, and virtual simulations to enhance the learning experience.

Supporting Educators: Acting as a powerful assistant for lesson preparation, curriculum planning, and administrative tasks, thereby increasing teaching efficiency.

While these opportunities are vast, we must address challenges regarding privacy, ethics, and the evolving role of the teacher. AI must be used responsibly to enhance education rather than replace the human essence that drives it.

As these technologies continue to evolve, we can expect even more radical innovations in the coming months and years. Only those institutions and educators who embrace this shift and integrate AI into their creative processes will remain at the forefront of the academic world.

AI and the Service of the Arabic Language

It is a consensus among the wise that language is the primary path to advancement and leadership. The "power of expression" (al-taqa al-bayaniyya) is what distinguishes humans and qualifies them for excellence. This truth is rooted in Revelation: "The Most Merciful, taught the Qur'an, created man, [and] taught him eloquence" (Surah Ar-Rahman: 1-4). Eloquence (Bayan) is the great blessing that follows creation, enabling communication, thought, and the expression of the soul.

Since the mid-20th century, digitization - the conversion of physical information into digital formats (PDF, JPEG, etc.) - has become a global goal. For languages, this meant "linguistic engineering": adapting natural languages to fit machine logic. For students and researchers, this has turned days of work into hours of efficient productivity.

Linguistic Engineering and Arabic

Linguistic engineering is the computational processing of natural languages, involving terminology, machine translation, text mining, and corpus linguistics. It requires two key competencies: linguistic expertise and computational skill.

For Arabic, AI has opened unprecedented doors:

Speech Recognition & Translation: Enhancing the accuracy of converting Arabic speech to text and vice versa.

Personal Assistance: Arabic is now a primary language for global mapping services and virtual assistants, providing a "simulated linguistic environment" for both native speakers and learners.

Sector Integration: AI has acted as the locomotive pulling Arabic into advanced fields like medicine, economics, e-commerce, and digital media.

Levels of Automated Processing

AI serves the Arabic language across several structural levels:

Digital Writing & Phonetics: Analyzing Arabic sounds and their functions within words.

Lexical & Morphological: Classifying vocabulary and using morphological analysis programs to understand word structures (Sarf).

Syntactic & Semantic: Automating the analysis of sentence structures (Nahw) and pinpointing meanings based on context and terminology.

Insights from AI (Google Bard/Gemini)

When asked how AI serves the Arabic language, the technology itself highlighted several roles:

Improving Quality: Raising the standard of text and voice translation.

Interactive Learning: Developing tools that make learning Arabic easier and more enjoyable. Content Creation: Generating high-quality Arabic digital content and automated articles. Preservation: Tracking linguistic changes and the evolution of meanings across social media and digital blogs.

A Call to Action: The Duty of Digitization

The digitization of Arabic sciences and literature is not merely an option; it is a modern necessity. To lag behind in providing AI with Arabic data and curricula is a grave contemporary failure.

For Researchers: AI allows them to transcend routine data collection, freeing the mind for deep reflection and the production of original intellectual work.

For Future Generations: Young minds are perpetually searching for the modern and the digital. If we do not provide them with a technologically advanced version of their language and heritage, we risk losing their engagement.

Conclusion:

AI is a powerful tool that can be used for immense good - elevating language and education - or for harm, such as spreading misinformation or distorting cultural and religious truths rooted in the Qur'an and Sunnah. Therefore, it is our duty to master these technologies to ensure they serve as a fortress for our language and values in this digital age. Rhetoricians must embrace AI as a tool for modernization. If we do not participate in shaping these technologies and supplying them with our linguistic heritage, we deprive our nation of a powerful means to advance Arabic sciences in the modern age.

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