

Artificial intelligence applications in healthcare:

1. Medical Imaging & Diagnostics:

AI are increasing the accuracy and speed of medical image interpretation. In radiology, AI can flag early signs of conditions such as lung cancer, stroke, and breast tumors with unprecedented precision.

Example: PACS Pixon Aurora.



2. Predictive Analytics and Risk Stratification:

In acute care settings, AI- driven predictive models can analyze vast datasets to flag high-risk patients.

Example: IBM Watson Health (now Merative).

3. Drug Discovery and Development:

AI is dramatically accelerating pharmaceutical research and development by modeling complex biological systems and identifying the most promising drug candidates. **An example** of an AI system in drug discovery is **AlphaFold**, which uses AI to accurately predict the 3D structures of proteins, accelerating the process of identifying new drug targets and designing drugs. Other examples include AI platforms like the one from **Insilco Medicine** and **Atom wise**, which screen chemical libraries to identify promising drug candidates, and systems like **DeepTox**, which predicts drug toxicity.

2025-2026



4. Personalized Medicine:

AI allows the tailoring of treatments to an individual's genetic profile and medical history. **An example** of a well-known artificial intelligence system in Personalized Medicine is **IBM Watson** for Oncology, **Tempus**. This precision medicine platform leverages AI to analyze vast amounts of clinical and molecular data, particularly in oncology, to help tailor cancer treatment plans based on a patient's unique genetic and clinical profile.



5. Virtual Health Assistants and Chatbots:

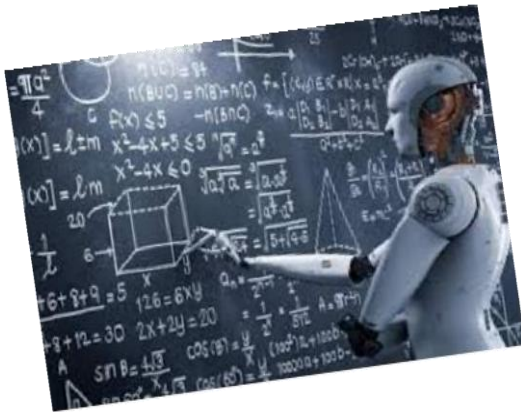
AI-powered virtual assistants are improving patient engagement by handling routine tasks such as triage, symptom checking, and follow-up education. **Example:** Ada Health, Babylon Health, Mayo Clinic's Symptom Checker.

6. Operational Optimization:

AI works behind the scenes, from dynamic staff scheduling and bed management to optimizing supply chain logistics and billing workflows. These systems help mitigate staff burnout and contribute to a more resilient overall healthcare infrastructure, which in turn translates to improved patient care.

Example : the GE Healthcare Command Center (also known as the AI-driven Virtual Command Center).

Application and tools of AI in Education:



Introduction:

Artificial intelligence (AI) has quickly evolved from a future idea to a crucial component of everyday life, including education. AI technologies are transforming education in 2024 by providing previously unheard-of chances for individualized instruction, more administrative effectiveness, and better academic results. AI has a significant and wide- ranging impact, from intelligent tutoring systems to AI-driven classroom administration.

Benefits of AI in Education

1. Enhanced Personalized Learning:

AI tailors educational content to each student's unique learning style and pace. For example, platforms like Dream Box and Smart Sparrow analyze student responses in real time to adapt lessons dynamically.



2. Automated Administrative Tasks:

AI automates grading, scheduling and report generation, significantly reducing the workload on educators. Tools like Grade scope provide consistent and objective grading of assignments, while AI scheduling software helps optimize class timetables and resource allocation.

3. More Engaged Learners: AI makes learning more interactive and engaging through gamified content and adaptive learning platforms. Programs like Kahoot! and Minecraft: Education Edition use AI to create interactive quizzes and simulations that respond to student input, keeping learners motivated and involved.

4. Improved Accessibility:

AI-driven assistive technologies support students with disabilities, ensuring a more effective learning environment. Speech recognition software like Notta transcribes spoken words into text for hearing-impaired students.

5. Actionable Insights:

AI analyzes vast amounts of educational data to provide educators with actionable insights. Platforms like Knew ton Alta track student performance across various metrics, helping teachers identify learning gaps and adjust their instructional strategies accordingly.

6. More Efficient Classroom Management:

AI tools help teachers manage classroom behavior and engagement. For example, Class craft uses AI to gamify classroom management, tracking student behavior and rewarding positive actions, which helps maintain a productive and motivated classroom environment.

7. Better Security and Assessment Integrity:

AI enhances the security and integrity of assessments through advanced proctoring and plagiarism detection. Tools like Turnitin check for originality in student submissions, and AI-supported proctoring systems monitor exam conditions to prevent cheating.

8. Continuous Lifelong Learning and Professional Development

AI supports continuous learning and professional development for educators by recommending personalized resources and courses. Platforms like Edthema provide tailored learning paths based on educators’ career goals and teaching needs.



9. Greater Scalability: AI enables the scaling of educational programs to accommodate more students without compromising quality. AI-based platforms can handle large volumes of data and provide personalized learning experiences to a growing number of learners, ensuring accessibility and consistency in education