Politics Group

Artificial Intelligence in 2050: Politics and Government

Ashley Chun
Whitney High School

Grace Song
Cypress High School

Elsa Lee
Madison Country Day School

Dayeon Yang
Gateway High School

Source: AI-generated image by ChatGPT

The usage of artificial intelligence (AI) in the field of politics is constantly developing and changing rapidly. In today's political atmosphere, AI plays a substantial role in political campaigns by drafting speeches and emails, providing synopsis of potential donors, and sparking new conversations about legislations related to AI regulation. The current trajectory of AI usage implies that AI's prevalence will only continue to develop further.

The increasing amount of data on the usage of AI in politics can be used to infer what trends may emerge by the year 2050. For example, AI has been "a focal topic for state legislatures in 2023" (Hatz et al). Many laws regarding strict AI regulation are to be expected because many policymakers "express a great deal of uncertainty" and"particularly around [...] international conflicts, the probability of great power war, bias and discrimination, and the impact on the US economy" (Hatz et al). Despite the skepticism surrounding AI in policymaking, it is still expected to become very prevalent. One indicator of this would be the likelihood of AI playing a significant role in campaigns, as there are "already AI companies that help candidates file papers to run for office, gather signatures, get on ballots, [and] put up websites" (Schneider). In short, by the year 2050, AI is expected to be used frequently by those involved in politics, but with many restraints.

While there is skepticism surrounding AI in politics, integrating it into public policy and government can enhance the system of democracy and government services. One significant benefit of AI is its ability to process massive pools of data, which can increase citizen participation and foster data-driven decisions. For example, according to researchers, "AI technologies can play an important role in extracting data from public blogs, forums, and the press, as well as help policymakers outline public opinion [which can] influence policy planning and implementation" (Savaget et al). Furthermore, AI can improve public accessibility and services by better allocating resources, reducing administrative fraud, and offering 24/7 support through chatbots in all languages. This technology ensures that public policies are smarter and aligned with the community's needs. For instance, a survey experiment by scholar Seulki Lee-Geiller revealed that "incorporating citizen consultations in AI-driven policymaking can enhance public trust and satisfaction" (Harrison). However, a lot of oversight is essential for success. According to the Brookings Institution, transparency platforms serve as "a key component of public accountability" (Wirtschafter et al). When properly regulated, AI will be able to make citizen and government relations more inclusive and efficient.

Although AI has the potential to improve government and politics, it also introduces serious challenges. One major concern is data security because governments store vast amounts of sensitive information including tax records, bank account details, and social security information. With this in mind, Olivia Shen, director of Strategic Technologies Program, explains that in "an age of AI, breaches will occur. It's not a matter of if, but when" (Regan). Another growing concern is the spread of AI-generated deepfakes. Deepfakes are highly realistic videos, images, or audios created using artificial intelligence, which can falsely portray candidates saying or doing things they never did. This in turn makes it easier to spread misinformation and manipulate the public. Finally, AI raises ethical concerns because government decisions involve human values, empathy, and judgement that technology cannot fully replace. As experts from Harvard University explain, politics is ultimately about people's lives and values. While AI can assist with tasks and efficiency, the emotional understanding required in government should continue to be spearheaded by humans.

However, there are still many actions being taken on regulating artificial intelligence within the realm of politics. For example, the White House's federal databases are transparent on both AI usage in federal cases and its "key risks and associated safeguards" (Friedler and Selbst). In particular, federal and state lawmakers have introduced legislation "specifically targeting the use of deepfakes and other manipulated content in federal elections," while states like "California, Minnesota, Texas, and Washington" have also passed similar laws. (Weiner and Norden). To protect the government and policy effectively, regulators should be aware of prioritizing the responsibility of development and deployment of AI to improve the government during this crucial period of political events.

As AI continues to change rapidly, finding the right balance between innovation and regulation will be important. With this, AI can still improve government and society through its ability to assist policymakers and citizens through its data synthesis and unbiased perspective. AI in government can improve efficiency, but it also creates risks such as data breaches, deepfakes, and ethical concerns, making strong security and human oversight essential.

Hospital Group

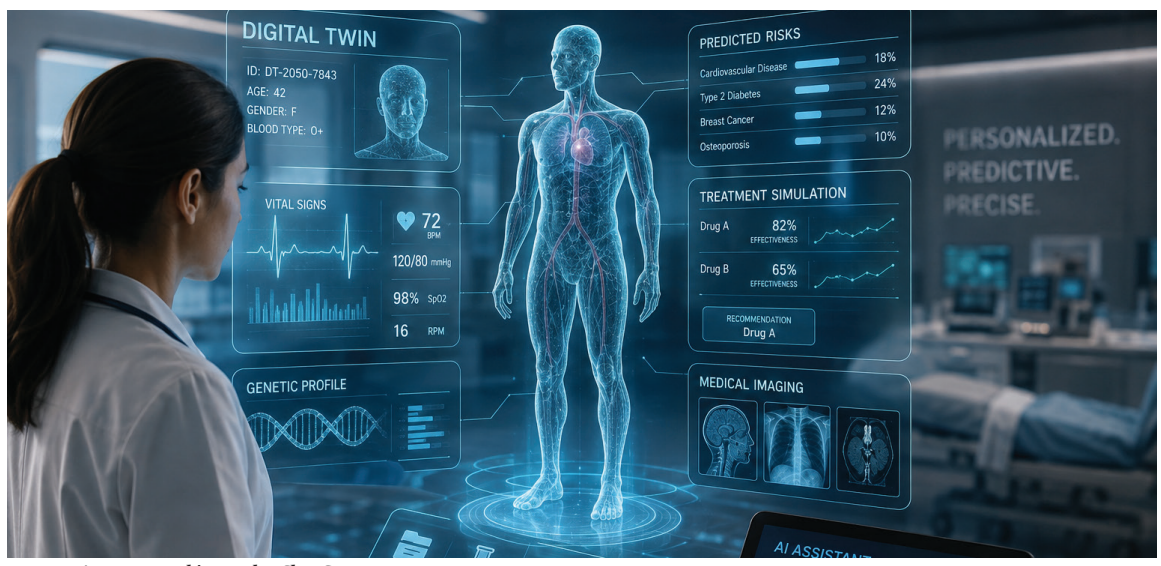
AI-Powered Digital Twins: The Future of Healthcare in 2050

Eric Yun
Lamp High School

Jason Lee
Northwood High School

Kaitlyn Lee
North Gwinnett High School

Jayden Kim
The Science Academy STEM Magnet



Source: AI-generated image by ChatGPT

Imagine going to see the doctor in 2050 and discovering that the doctor has tested several treatments on a digital twin of you. A digital twin in the medical world would feature information from your medical records, genetic testing, medical imaging, lab tests, and wearables. Using the power of artificial intelligence, these digital twins would be able to learn about your health, predict health problems you might face in the future, and simulate the effects that different treatments would have on your body. However, as digital twins become stronger and stronger, the health care industry will face challenges related to your health data privacy, equality in health care for all individuals, and the control that humans should have over artificial intelligence.

Artificial intelligence also has the potential to transform digital twins into predictive models. The digital twin technology could utilize artificial intelligence to recognize the patterns in a patient's information to recognize the signs of an illness before the patient begins to experience the symptoms of the illness. Furthermore, as the patient gathers new information about themselves, the digital twin could be updated and simulate various treatments for the patient. Additionally, researchers could utilize these simulations to test treatments for illnesses in ways that are much faster than treating patients within the human body. By 2050, the predictive abilities of digital twin technology will likely lead to increased diagnoses of illnesses in their earliest stages, personalized treatments for those patients, and increased rates of success in medical research.

However, the information that is required to create these digital twins also presents one of their greatest risks: privacy. A digital twin will contain information about the patient such as their medical history, DNA information, scans, prescriptions, and information from wearable devices. Furthermore, the healthcare industry is already plagued by information security issues. The 2024 Change Healthcare cyberattack affected information connected to 192.7 million individuals according to the United States Department of Health and Human Services. Even removing a patient's name from their records may not be enough to protect their privacy if their genetic and medical information can be recognized to belong to that individual. Thus, patients will likely have to gain more control over their digital twins as to who can access their information and how their information will be used.

Access to digital twins could also create a new divide in healthcare. Digital twins require medical data, cybersecurity systems, imaging technology, and various forms of maintenance to operate effectively. Patients who cannot access specialists, genetic testing, medical imaging, wearable technology, or the internet will have less complete digital twins, which will result in less accurate predictions of their health. Additionally, hospitals and healthcare systems that can afford the technology will begin using digital twins in their facilities before those with lower budgets. Finally, insurers may use digital twins to create even more detailed predictions of the health of individuals in the future. While this could be helpful in assessing health risks for individuals, it also raises the potential of insurers judging the health of individuals based on illnesses that their digital twins predict they may develop in the future.

Perhaps the most difficult question regarding digital twins is the degree of authority that they should have. As digital twins can access and process more medical information than physicians can memorize, they can help doctors identify conditions that individuals may have missed. However, doctors can understand aspects of patients' lives that may not ever be captured in digital twin datasets. Additionally, as doctors must develop the intuitions and judgments that are required for treating patients, relying on digital twins constantly poses a risk of weakening those efforts. For these reasons, digital twins should be intended to assist physicians rather than replace them. Should a digital twin and a physician arrive at different diagnoses for a patient, it is up to doctors to decide which diagnosis is safer to follow through additional testing or by acquiring a second medical opinion. Overall, any decisions that significantly impact a patient's health and lives should remain under the judgment of human physicians.

In 2050, the integration of artificial intelligence into the function of digital twins will transform them from virtual replicas into healthcare partners. Digital twins will assist doctors in predicting diseases and creating personalized treatment plans for patients, improving the medical research industry. Yet, there will also have to be provisions to protect patients' information and ensure that cutting-edge healthcare is not only for the wealthy but also for all who require medical assistance. The innovation of AI digital twins within the healthcare industry will either be one of the greatest innovations in healthcare or the cause of significant challenges for the industry. It will ultimately depend on the choices that society makes regarding the use of this technology.