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**Department of Economic and Social Affairs
Sustainable Development**

GeminiDT applications and solutions to achieve and support the United Nations sustainable goal #3 to ensure healthy lives and promote well-being for all at all.

Gemini Digital Technologies' Medical Condition Discovery Engine is volumetric image compiling technology platform which empowers radiologists and the medical community with comprehensive 3D visualization for the earliest detection of disease. This technology removes the subjective, human-eye interpretation and identifies potential anomalies down to the micron in real time providing a more accurate knowledge of a patient's current medical challenges.

By utilizing GeminiDT's software, healthcare practitioners can improve the quality and accessibility of healthcare services. Embedded in the clinical workflow, the Medical Condition Discover Engine can be easily deployed into existing medical systems. GeminiDT's compatibility with numerous scanning modalities allows for comparative analysis using historical scan data to new raw data sets from CT, MRI, PET, Xray and sonography.

Radiologists and researchers can now develop preventive therapies, personalized care, and see cause and effect on the digital twin with certainty and accuracy. This ability to isolate single values (down to the micron) of interest and eliminate all other data points is *a healthcare industry first*.

Harnessing individualized precise digital twins of human anatomy empowers medical professionals, educators, and individuals with detailed insights into health conditions and treatments; thus providing a better understanding of a patients' unique anatomical structures and conditions, leading to more accurate diagnoses and tailored treatment plans.

The Human Anatomy Project and GeminiDT can benefit the sustainable development goals in the following target areas:

Target 3.1 Reduce the global maternal mortality ratio to less than 70 per 100,000 live births.

High-quality, precise digital twins could enable simulations to study complications, optimize delivery techniques, and improve real-time decision-making during complicated deliveries, thereby reducing maternal and neonatal mortality. This will improve care during pregnancy and childbirth.

Target 3.2 End preventable deaths of newborns and children under 5 years of age, with all countries.

These advanced tools enable early detection of medical conditions and abnormalities, including newborns and children. Timely identification of health issues aligns with the goal of ending preventable deaths in this vulnerable age population.

Target 3.3 End the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne illnesses, and other communicable diseases.

The precision of digital twin data can assist in diagnosing infectious diseases including AIDS, tuberculosis, malaria, and other communicable diseases. The ability to visualize the impact on specific organs and tissues enhances understanding and management. Accurate diagnoses lead to timely treatment and contribute to ending the epidemics and burdens of these diseases.

Target 3.4 Reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.

The enhanced diagnostic accuracy of the individualized digital twin allows for more accurate and detailed diagnostics. This improvement is crucial for reducing mortality from both communicable and non-communicable diseases, as accurate diagnosis is a cornerstone of effective treatment and prevention. As an example, simulations could illustrate the detrimental effects of tobacco and other substances on the body, contributing to anti-tobacco campaigns and substance abuse prevention. This in turn provides tailored treatment plans. This personalized approach contributes to ensuring healthier, longer lives and promotes well-being for people of all ages.

Target 3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.

Simulating the effects of substance abuse on individual digital twins will foster better understanding among individuals, raise awareness and support prevention and treatment efforts related to substance abuse.

Target 3.6 Halve the number of global deaths and injuries from road traffic accidents.

Key facts:

- Road traffic injuries are the leading cause of death for children and young adults aged 5-29 years.
- Approximately 1.3 million people die each year as a result of road traffic crashes.
- More than half of all road traffic deaths are among vulnerable road users: pedestrians, cyclists, and motorcyclists.
- 93% of the world's fatalities on the roads occur in low- and middle-income countries, even though these countries have approximately 60% of the world's vehicles.

Gemini's technology can measure and map the environment in a simulated virtual reality experience. The software's ability to use data and math can recreate an endless variety of immersive situations encountered while driving. This ability to create virtual reality learning experiences in "real" environments can be an unparalleled level of reality for training and education.

Target 3.7 Ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programs.

Detailing anatomical models aid in educating healthcare providers and individuals about sexual and reproductive health. This knowledge supports universal access and education to sexual and reproductive health-care services. Precise digital twin data can assist in visualizing reproductive health processes and procedures.

Target 3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all.

Healthcare providers worldwide can engage with three-dimensional models of the human body, improving their understanding of complex medical concepts and procedures.

GeminiDT's software's ability to accurately measure the efficacy of treatments can help providers make more informed treatment decisions. This aligns with the goal of improving access to safe, effective, quality, and affordable essential medicines and vaccines for all.

GeminiDT's Medical Condition Discover Engine can identify anomalous tissue values with greater accuracy than the human eye, allowing for faster and more accurate diagnosis. This can help reduce wait times and improve the overall quality of healthcare services, aligning with the goals of achieving access to quality essential health-care services and universal health coverage, including financial risk protection.

Target 3.9 Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.

The ability to visualize the impact of hazardous chemicals and pollution on the body through advanced data analysis could provide insights on how hazardous chemicals, air, water and soil pollution affect the body, raising awareness about the health risks associated with environmental factors. This knowledge can contribute to reducing deaths and illnesses from pollution and contamination.

By harnessing spatial computing and volumetric data to create individualized digital twins of the human anatomy, the Human Anatomy Project and GeminiDT's Medical Condition Discovery Engine can revolutionize medical education, diagnosis, treatment, and prevention. These advancements directly support the objectives of the Sustainable Development Goal #3 by improving healthcare outcomes, reducing mortality, and promoting well-being across diverse populations. This improvement is crucial for reducing mortality from both communicable and non-communicable diseases, as accurate diagnosis is a cornerstone of effective treatment and prevention.

Early Warning and Risk Management: Integrated data platforms and simulations could enable faster response to outbreaks and health risks, aiding in early warning and risk reduction strategies.

In summary, harnessing spatial computing and volumetric data sets to create individualized precise digital twins of human anatomy empowers medical professionals, educators, and individuals with detailed insights into health conditions and treatments. Advanced medical simulations could serve as powerful training tools for healthcare professionals, especially in resource-limited areas. GeminiDT aligns with multiple targets of SDG #3, contributing to healthier lives, improved well-being, and better healthcare access for all.

It's important to note that successful implementation would require collaboration between medical experts, technology developers, regulatory bodies, and governments. Ethical considerations, data privacy, and equitable access to these technologies would also need to be carefully addressed.

Thank you,

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