

Digital Twins: AI's Bold Vision for Human Longevity

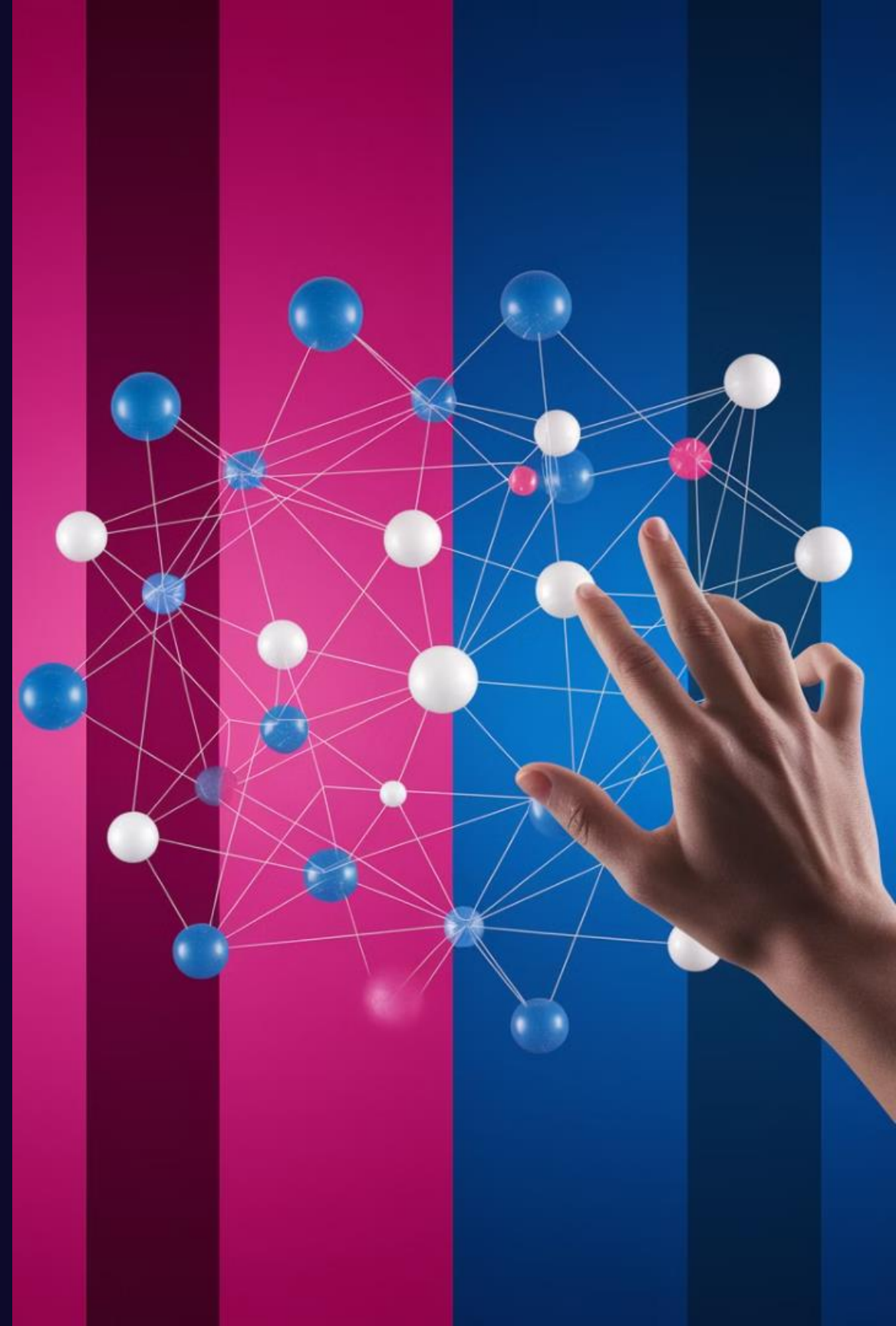
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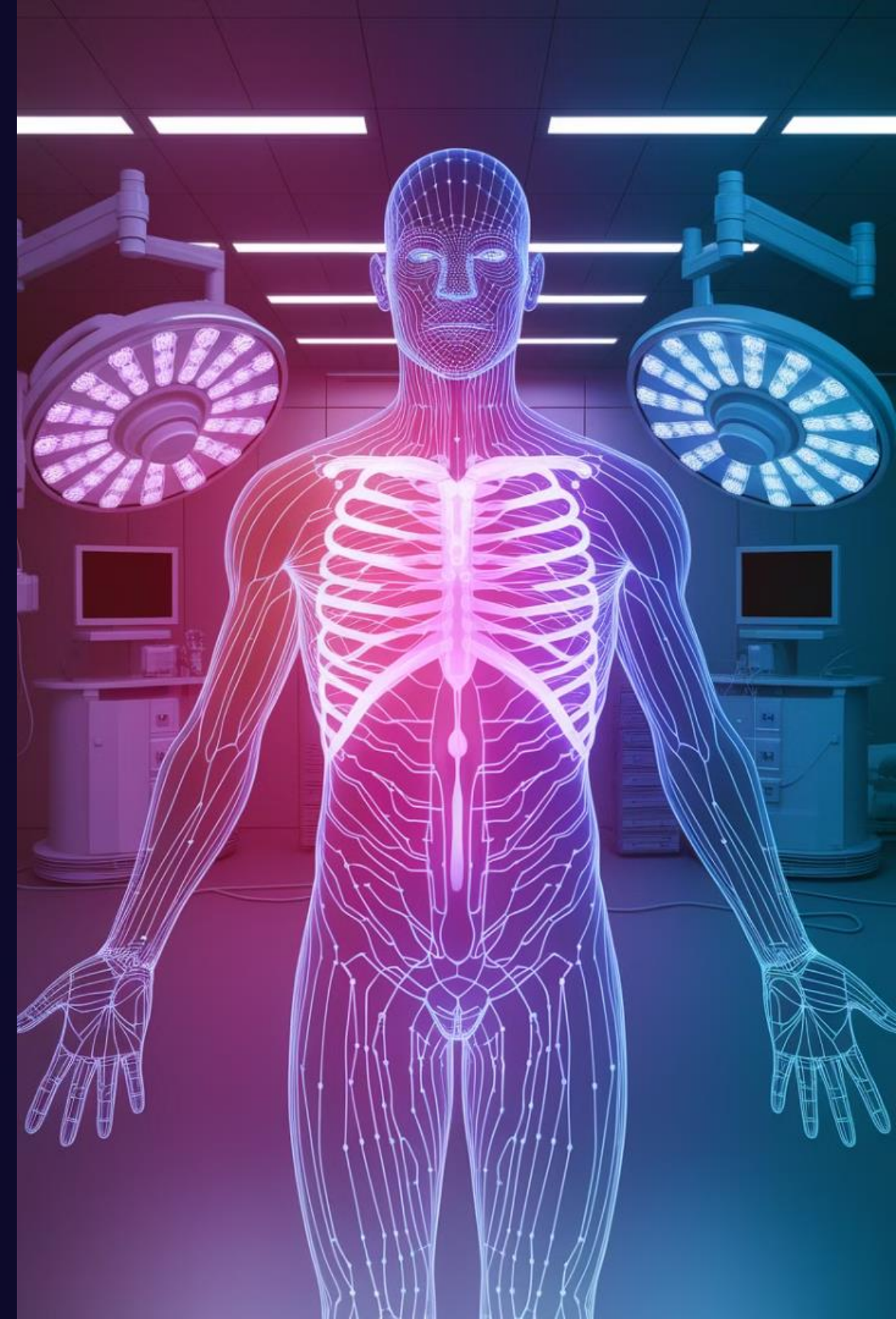


What is AI?

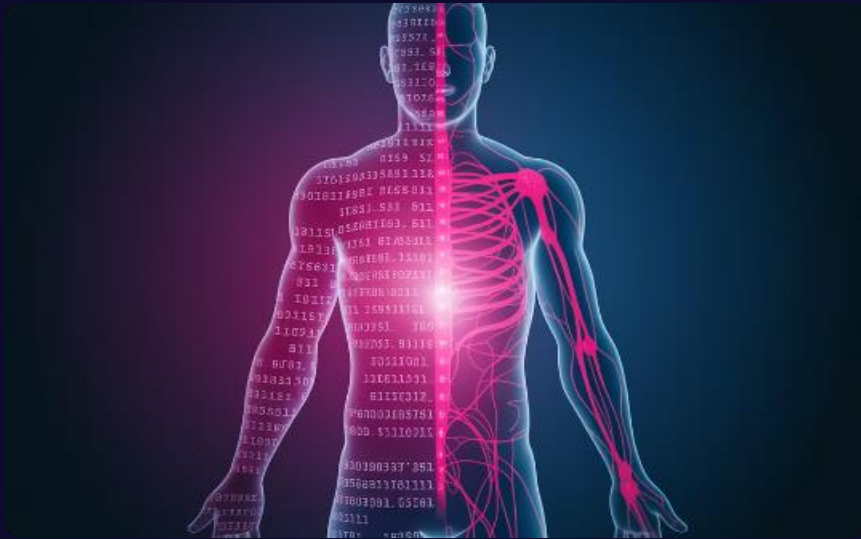
Artificial Intelligence (AI) is a technology developed **by the people, for the people**—designed to assist humanity, enhance our surroundings, and support our ecosystem.



What is AI? The Silent Partner in Healthcare

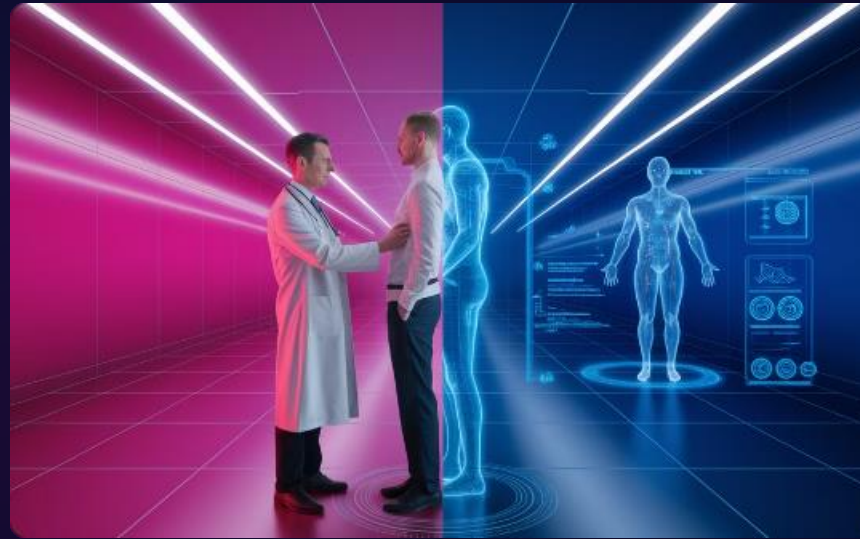


Digital Twins—Your Body's AI Mirror



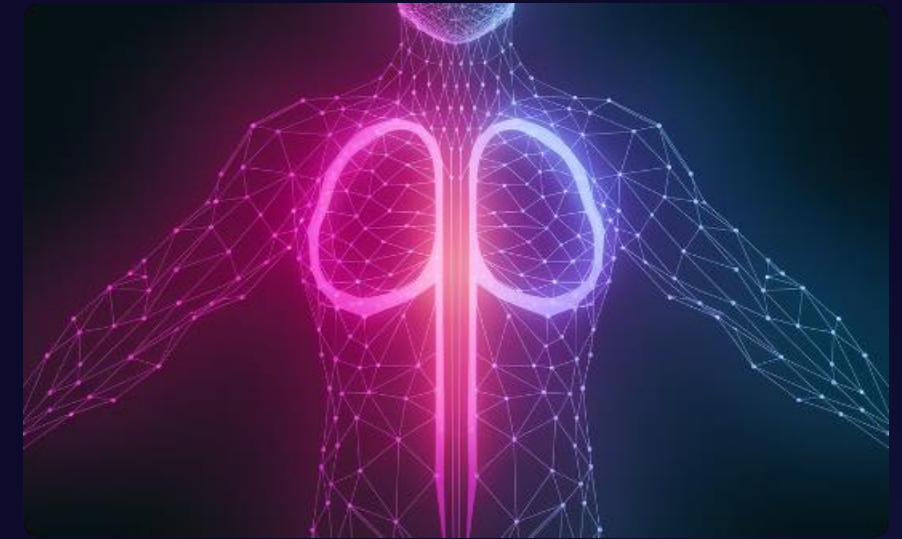
Data Mapping

Your unique biological blueprint, translated into precise digital code



Real-Time Simulation

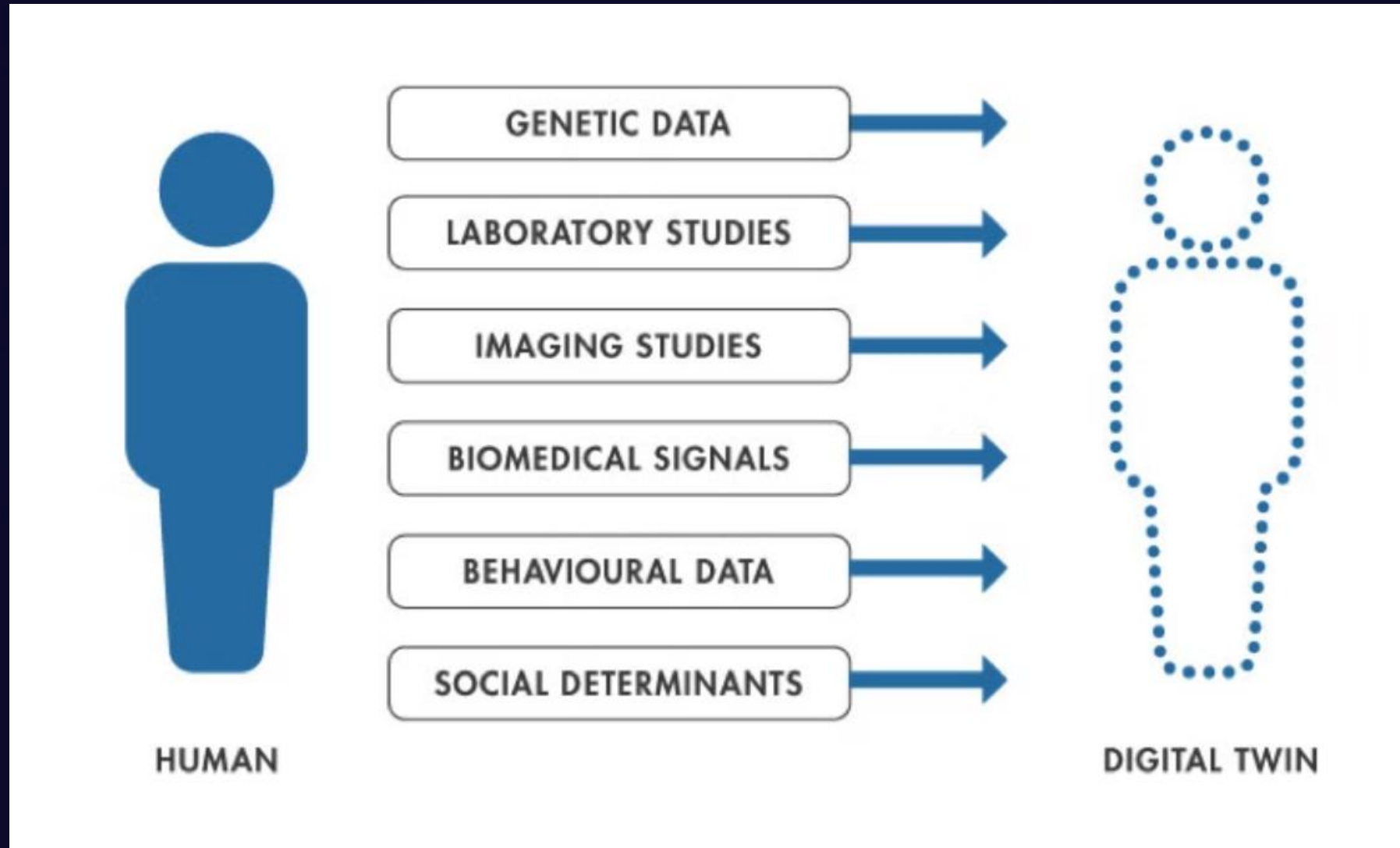
A living, breathing model of your health that updates in real time



Predictive Insights

More than a model—a dynamic mirror revealing your body's potential futures

Digital Twins – How They Could Have Changed My Family's Story



AI in Clinical Supply Chains—The Race Against Time



Demand Forecasting

Predicting cancer rates regionally, ensuring pharmacies stock lifesaving drugs *before* they're needed.



Inventory Agility

Like a GPS rerouting traffic, AI redirects supplies during crises—no more delays for patients like her.



Last-Mile Delivery

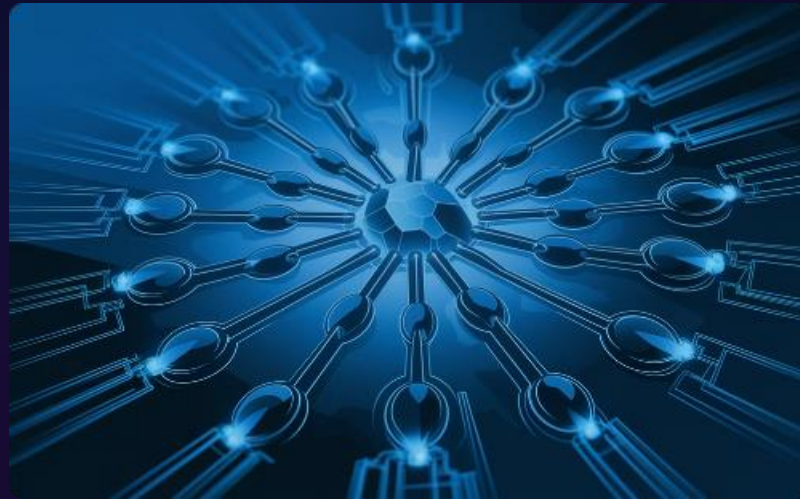
Drones or autonomous vehicles delivering temperature-sensitive drugs *directly* to her doorstep.

Moderna's AI-Driven Optimization of COVID-19 Vaccine Production and Distribution



Targeted Distribution

AI algorithms analyzed vaccination patterns to identify underserved communities, enabling targeted messaging and educational campaigns to boost vaccine uptake in critical areas.



Supply Chain Optimization

Advanced AI systems optimized supply chains and logistics, precisely matching vaccine distribution to regions based on case numbers and stock levels.



Production Scaling

Through AI and robotic automation, Moderna achieved remarkable scaling - from 30 doses per month to over 1,000, revolutionizing mRNA production capabilities.

How Moderna Redefined Clinical Trials with COVID-19 Vaccine Innovation



48-Hour Virus Decoding

AI algorithms enabled Moderna to decode COVID-19's genetic sequence in just 48 hours, launching the fastest vaccine development in history



AI-Powered mRNA Design

Advanced AI systems optimized mRNA sequences to maximize protein production, significantly enhancing vaccine efficacy



Automated Testing

AI-driven automation accelerated pre-clinical testing and data analysis, rapidly identifying the most promising mRNA candidates

Clinical Studies—From Guesswork to Guarantees



Smart Treatment

If digital twins existed, AI algorithms could scan millions of them to identify my mom's ideal matches for prescribing personalized medications.



Real-Time Insights

AI detecting my mother's positive response to treatment weeks faster, sparing her months of side effects.



Global Database

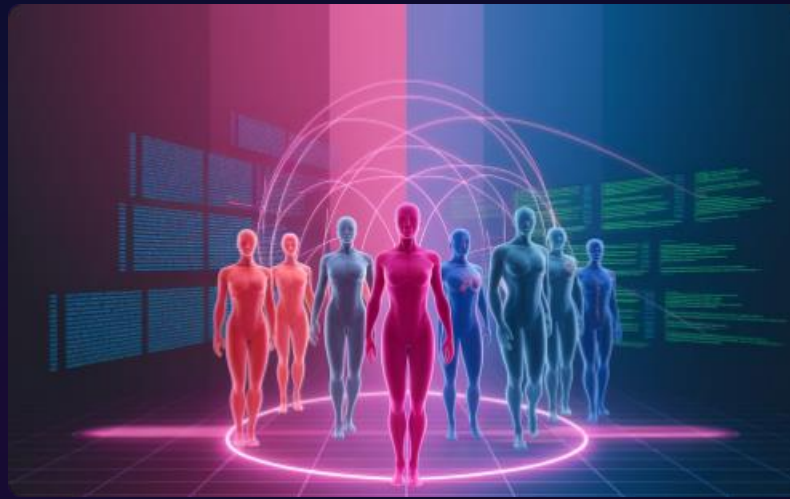
My mom's treatment results are added to a global database to make sure studies include people from different backgrounds, so medical discoveries help everyone.

Sanofi's AI-Powered **Digital Twin** Technology in Clinical Trials



Accelerated Drug Development

Virtual patient populations enable rapid simulation of drug interactions, dramatically speeding up safety and efficacy assessments in early development phases.



Enhanced Trial Design

Digital twin modeling of diverse patient profiles improves drug response predictions and optimizes trial parameters.



Improved Patient Recruitment

Virtual simulations streamline candidate identification, reducing enrollment time and costs in clinical studies.

Challenges—Ethics, Trust, and the Path Forward



Privacy by Design

Encrypted twins, where *you* control access.



Bias Audits

Regular checks to ensure AI doesn't overlook women's health issues, like my mother's cancer.



Human-AI Collaboration

Doctors steering the ship, with AI as the compass.

A Future Without Late Diagnoses.

