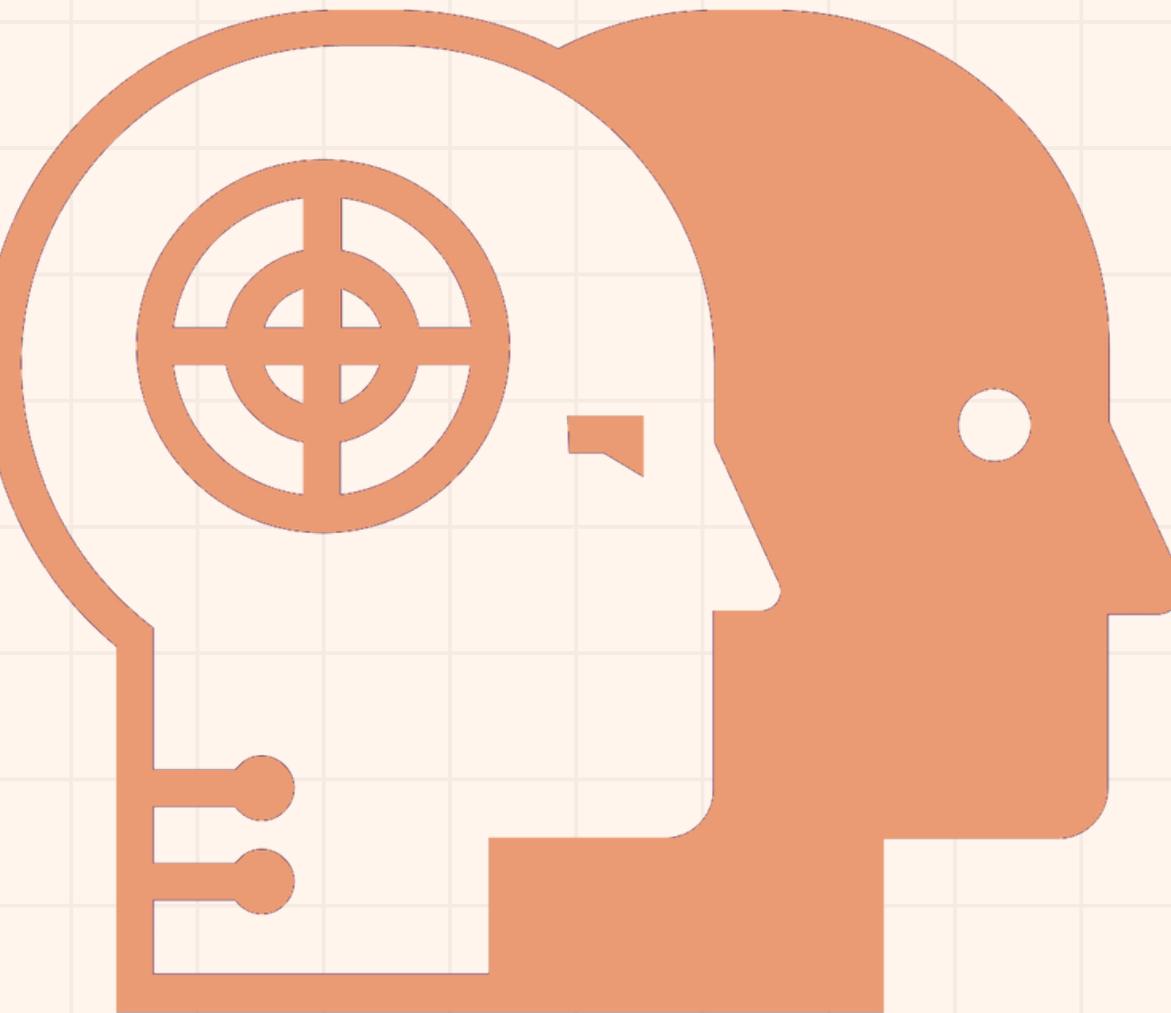
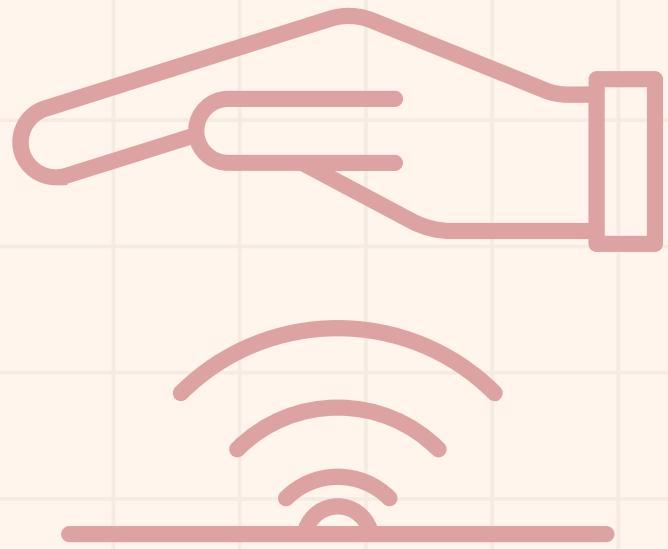


DIGITAL TWIN TECHNOLOGY

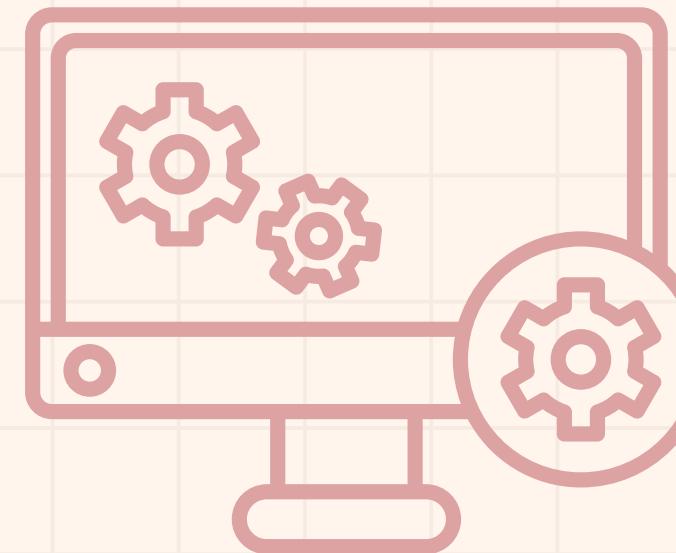
Bridging Physical and Digital Worlds

Understanding the Future of Intelligent Systems

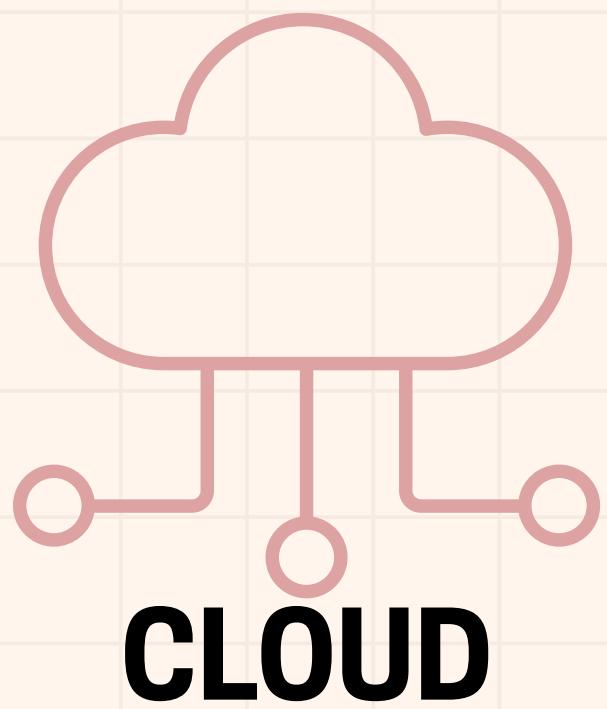




CHEAP SENSORS



SMART PROGRAMS



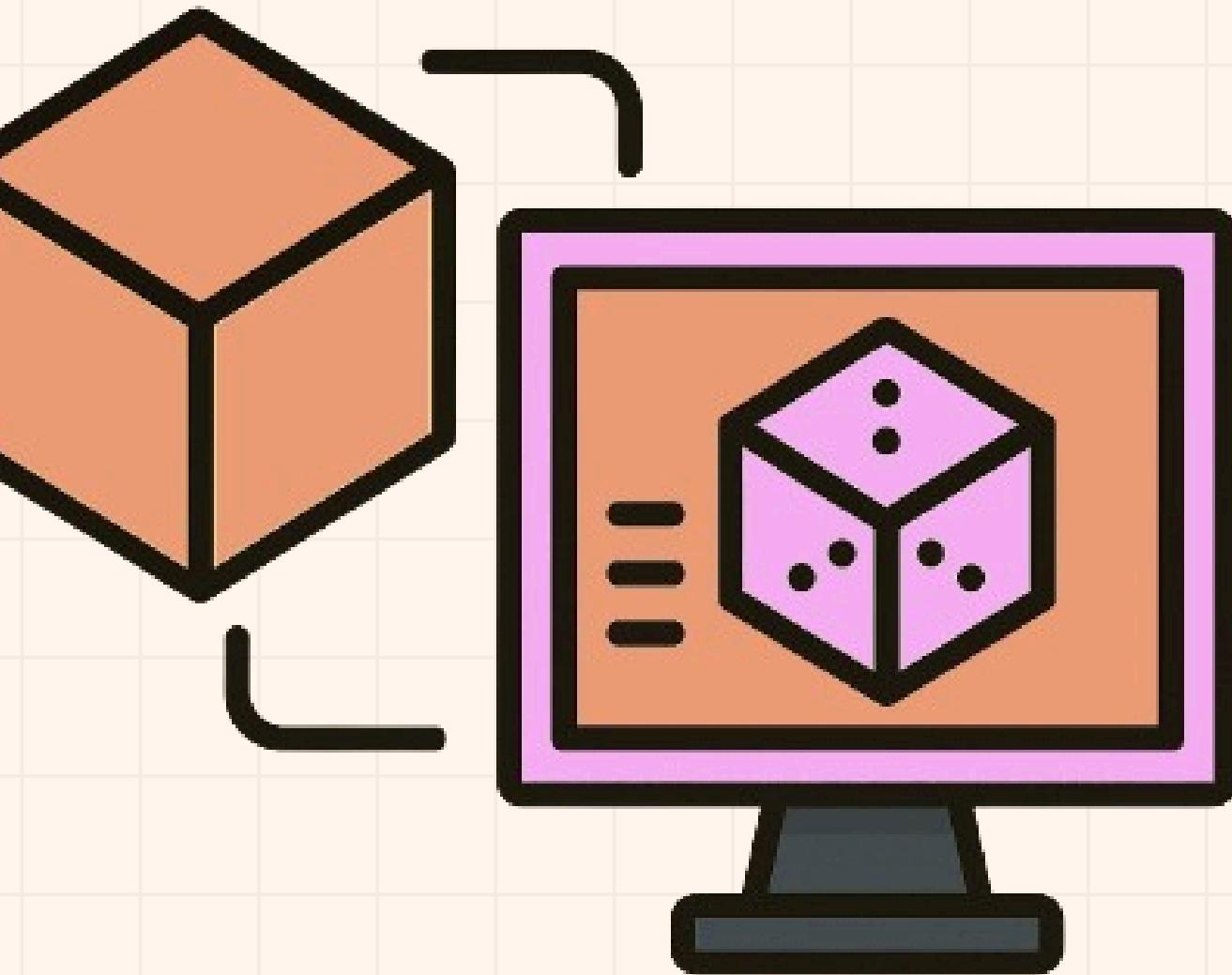
INTRODUCTION

What is a Digital Twin?

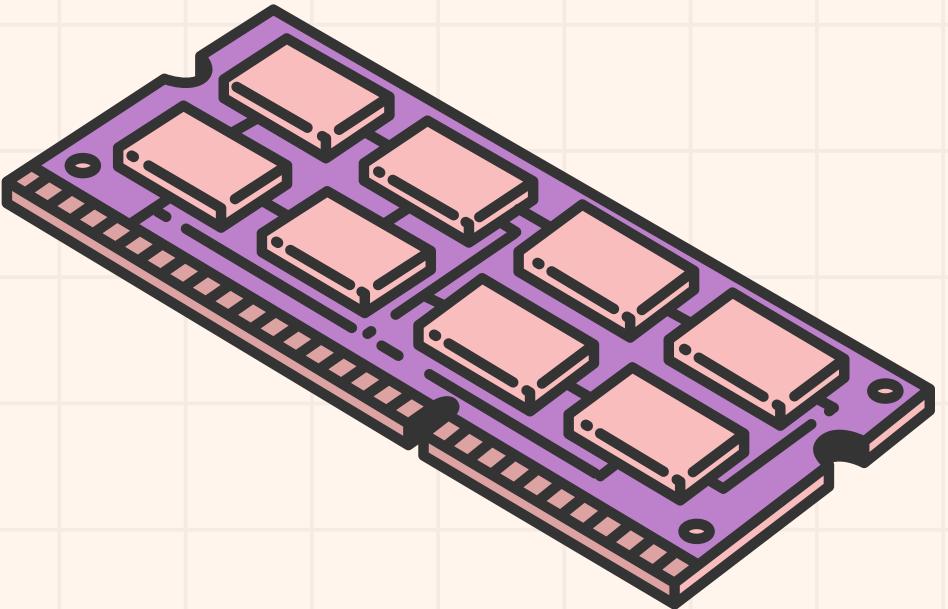
Definition:

Key Components: Sensors, Data Integration, Simulations,
Machine Learning

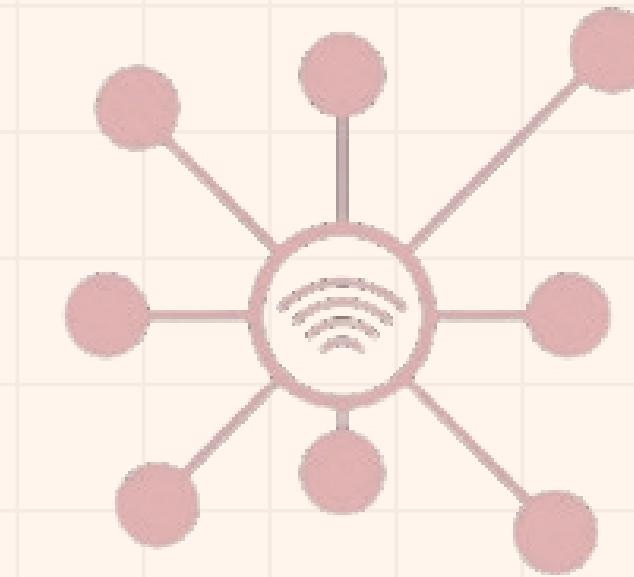
Purpose: Predict performance, optimize operations, and
enhance decision-making



HOW DIGITAL TWINS WORK



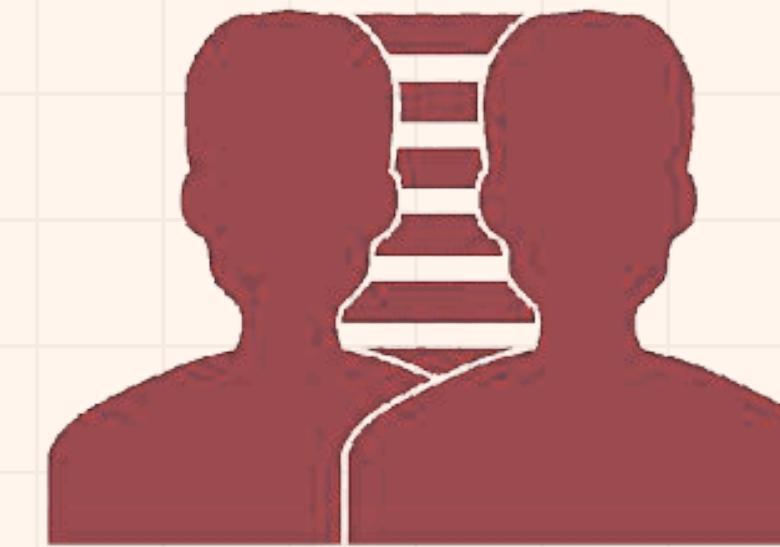
REAL MACHINES AND SENSORS



DATA COLLECTIONS



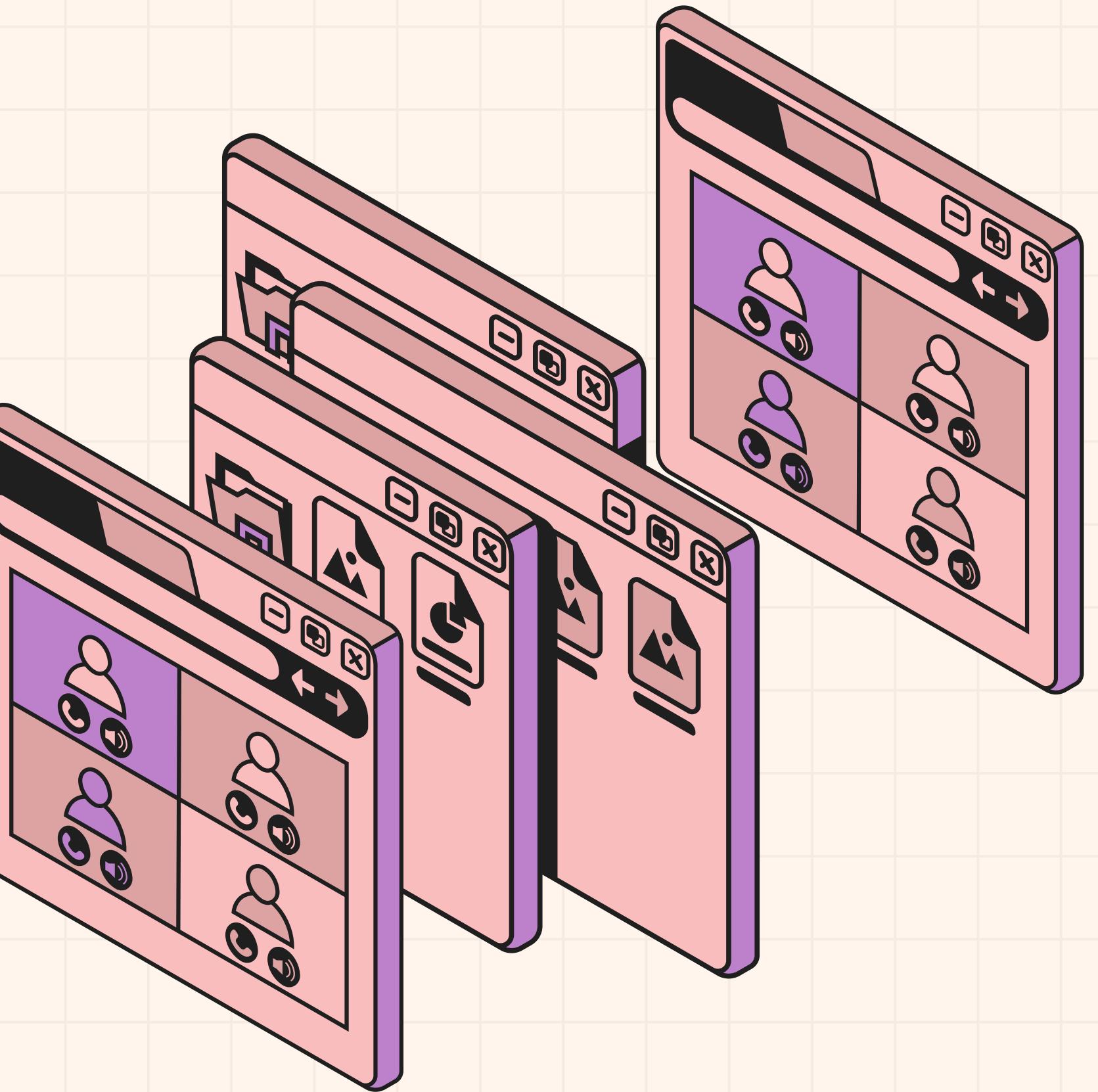
MODEL SIMULATES AND ANALYZES
THE SYSTEM'S BEHAVIOR

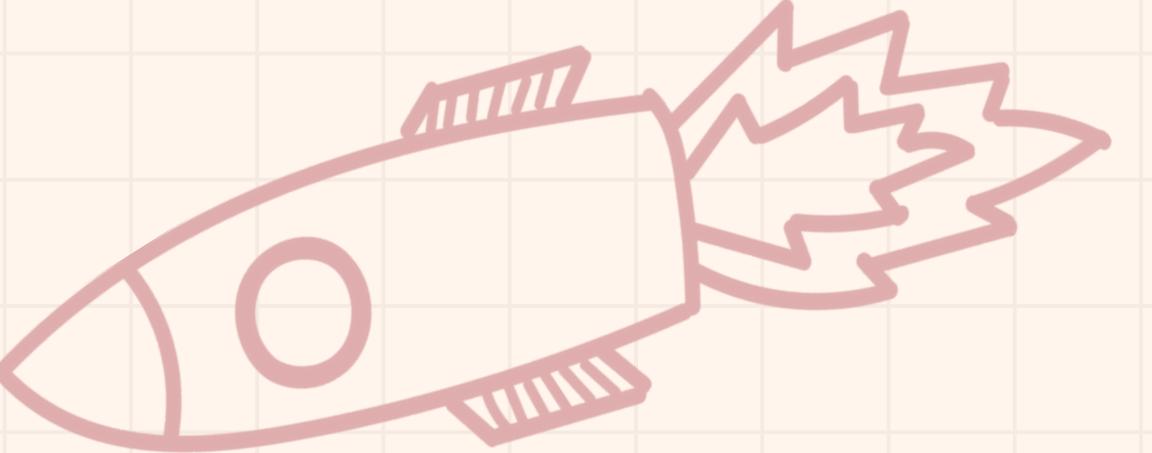


FEEDBACK PROVIDED TO OPTIMIZE
PERFORMANCE

BENEFITS OF DIGITAL TWINS

- Real-time monitoring and diagnostics
- Predictive maintenance
- Operational efficiency
- Cost reduction
- Product and process innovation



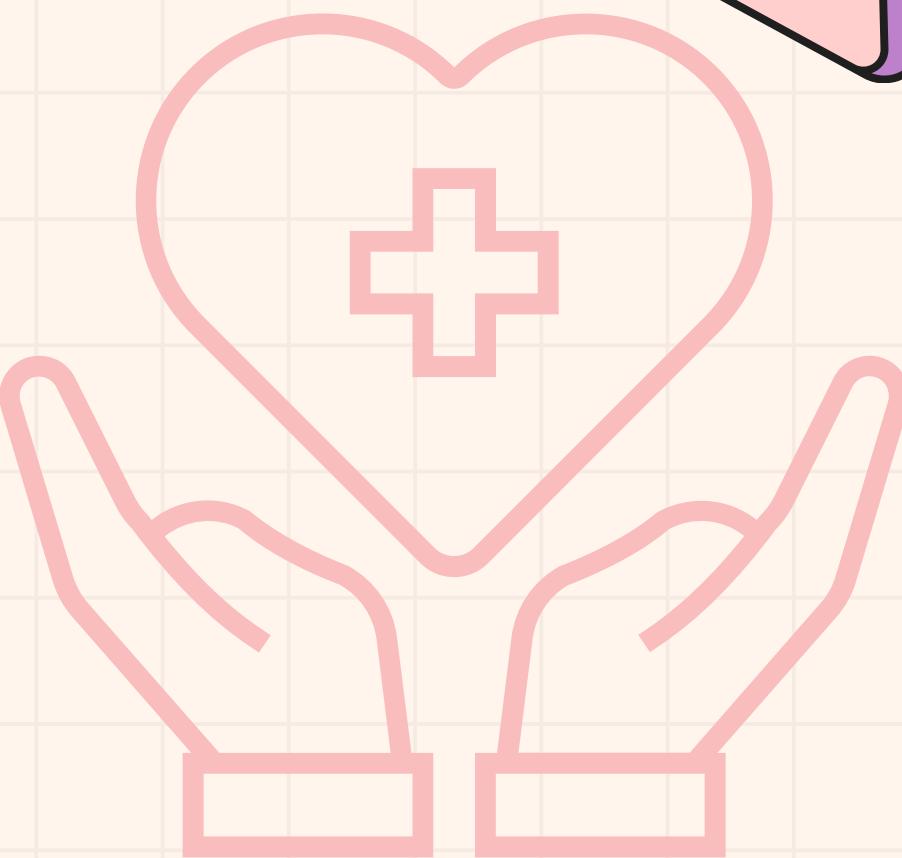
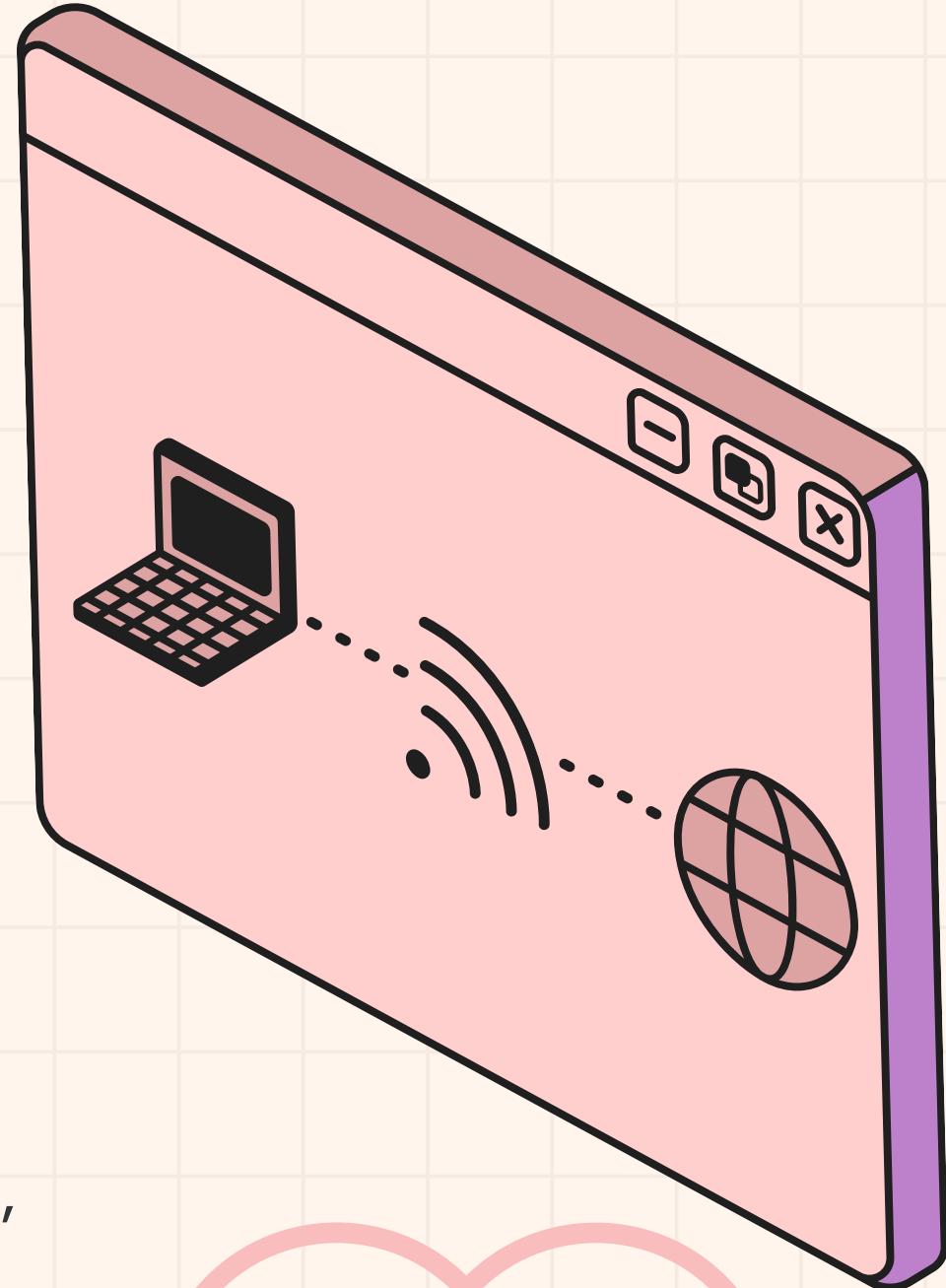


EVOLUTION AND GROWTH OF DIGITAL TWINS

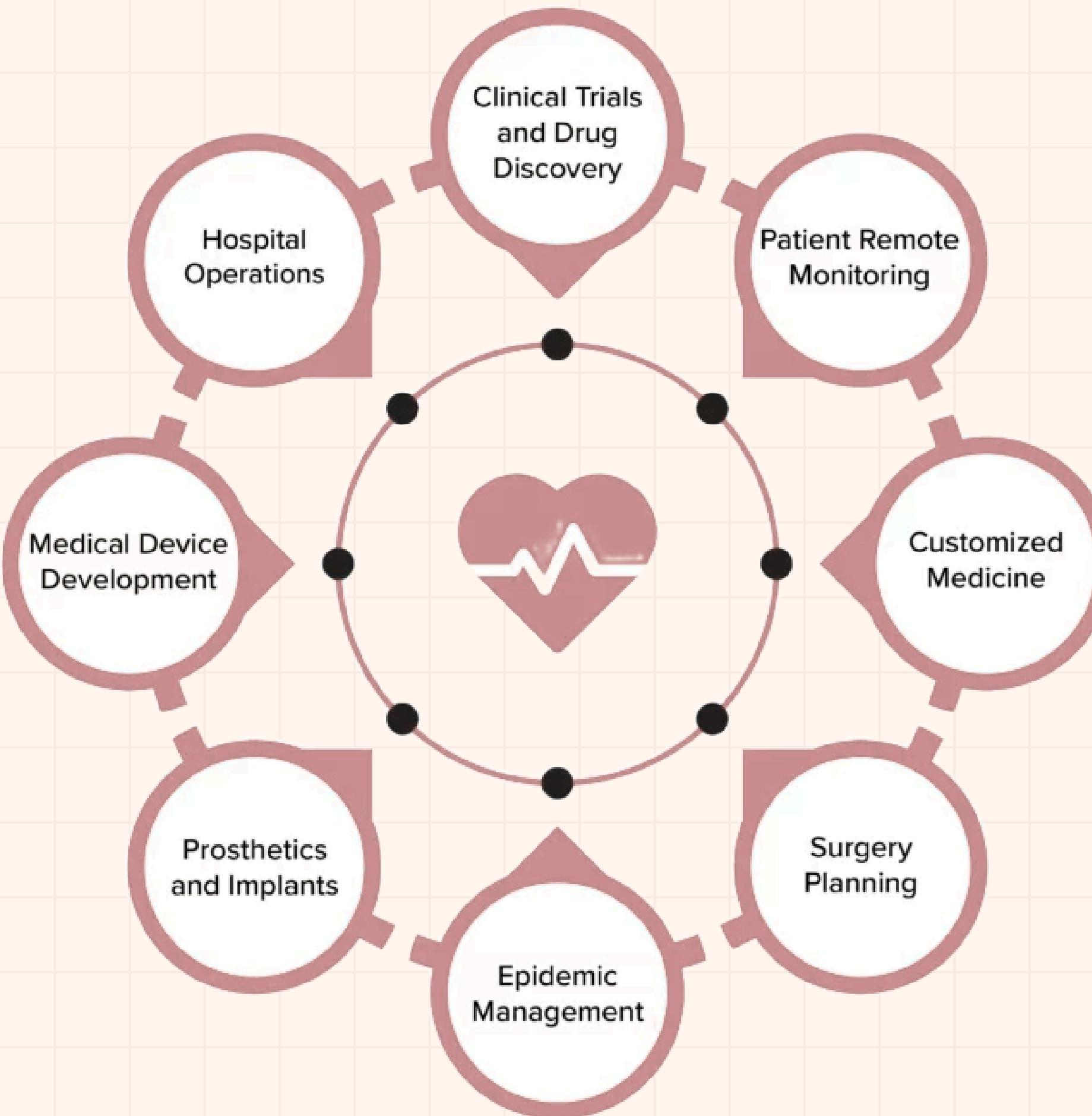
Initially used in aerospace and manufacturing

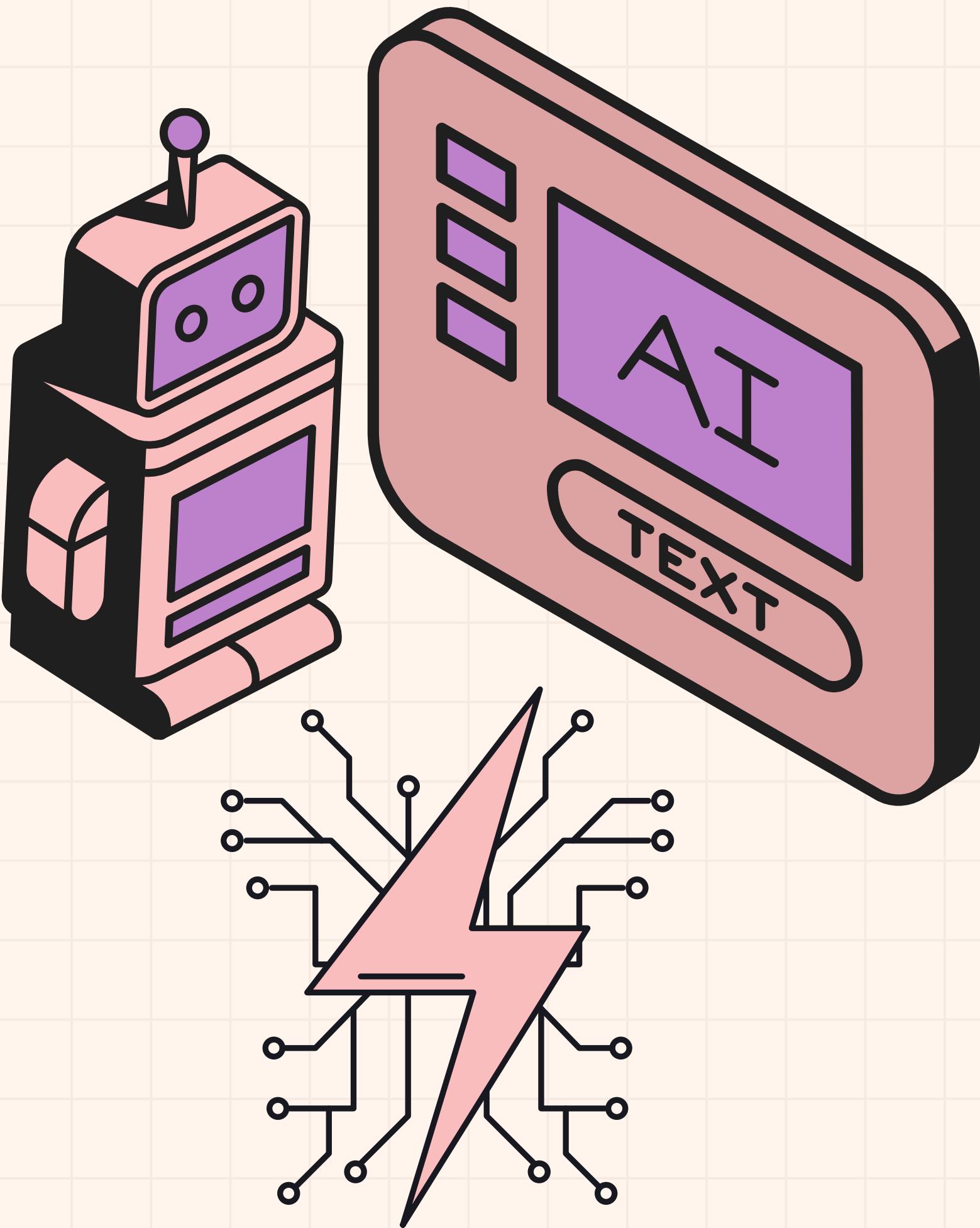
Now used across sectors: healthcare, energy, automotive, and infrastructure

Driven by advancements in AI, cloud computing, and edge computing



DIGITAL TWINS IN HEALTHCARE





AI & DIGITAL TWINS

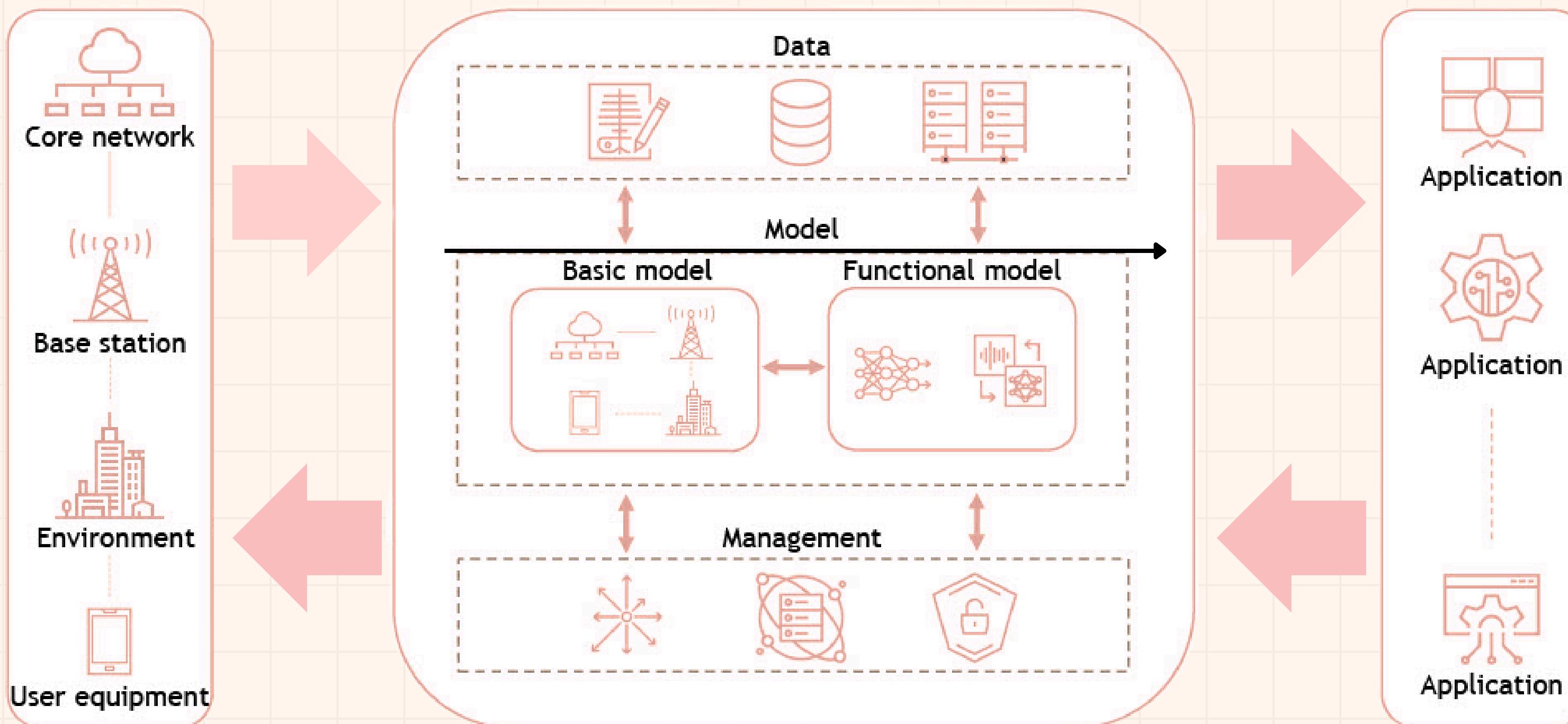
- AI enhances simulations with predictive analytics
- Machine learning refines digital models continuously
- Autonomous decision-making for system optimization

NVIDIA'S ROLE IN DIGITAL TWIN TECH

OMNIVERSE PLATFORM TO BUILD LARGE-SCALE DIGITAL TWINS

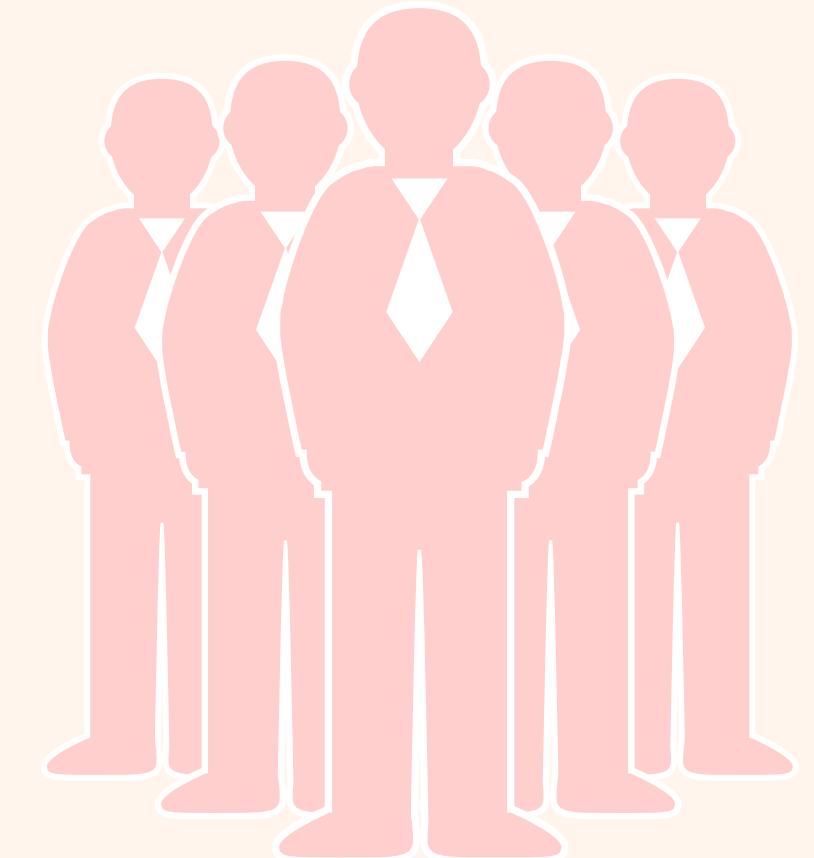
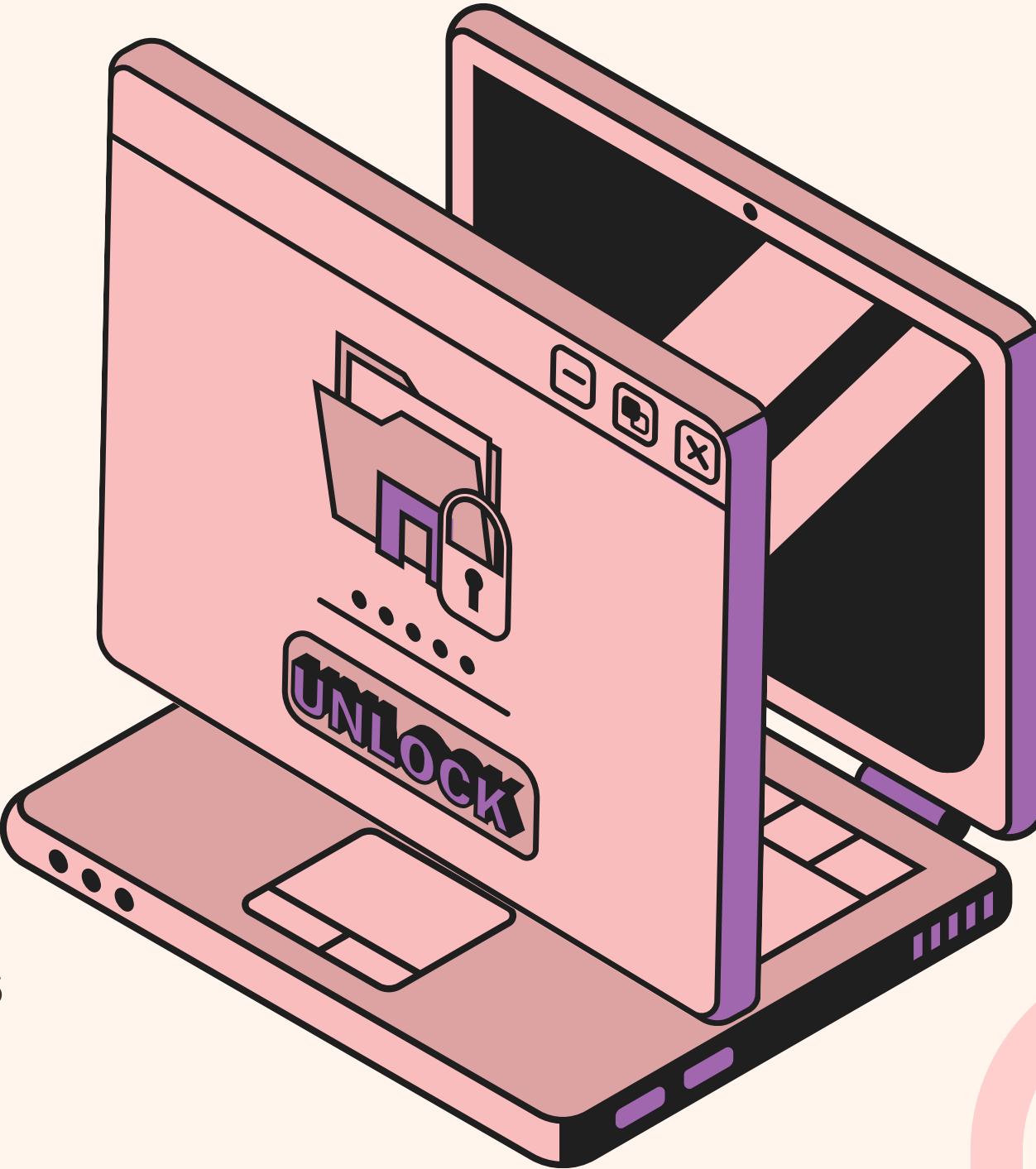
REAL-TIME SIMULATION CAPABILITIES

USE CASES IN FACTORIES, CITIES, AND SCIENTIFIC RESEARCH



CHALLENGES AND CONSIDERATIONS

- Data privacy and security
- High initial investment
- Integration with legacy systems



FUTURE OUTLOOK

Greater adoption in healthcare, logistics, climate modeling

Integration with AR/VR for immersive interaction

More scalable and democratized digital twin solutions

