LLMS UNDER THE HOOD & THEIR IMPACT ON HEALTHCARE

Presenters:

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Dr. Jorge Saucedo-Daniel

- USC Graduate Ed.D.
- Curriculum Dissertation, *Faculty Implementation of Culturally Relevant Instructional Practices in the Community College Classroom*
- Husband, father, sibling, son
- First-generation college student
- Regional Director, Orange County Regional Consortium
- Nonprofit board member

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EASTE

1 billion

1 billion weekly users of ChatGPT by the en of the Q4 2025

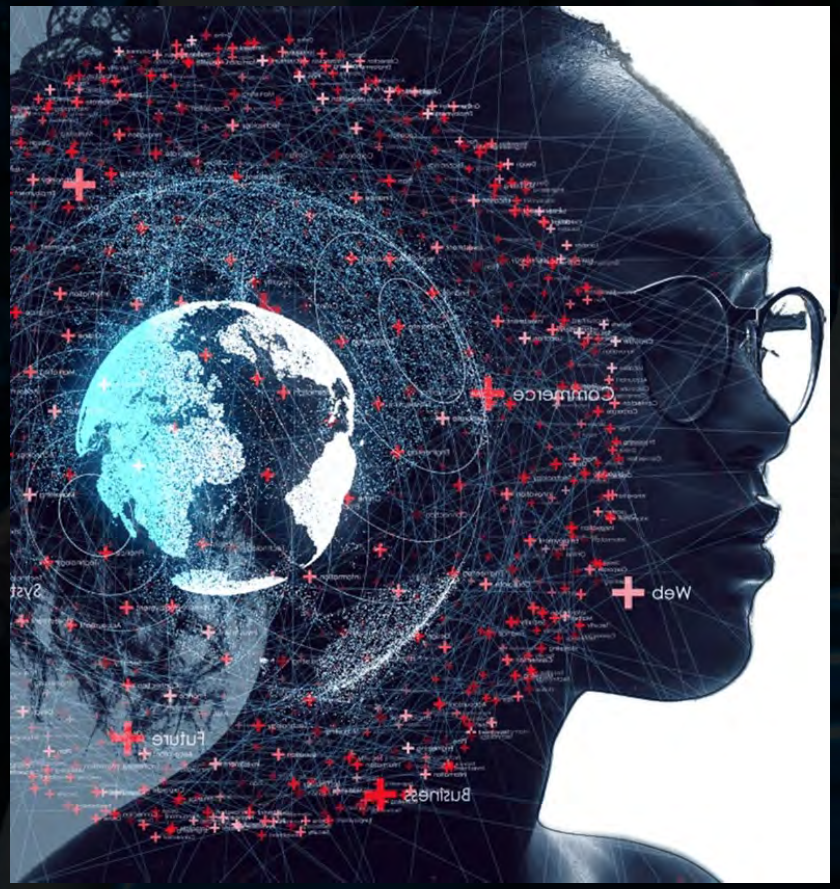
Join at menti.com | use code 3433 9390

What word(s) do you think of when you see/hear the phrase “AI?”

Examples of AI in Real-Life

- Waymo
- Self-driving car in Phoenix, AZ
- https://waymo.com/intl/es/waymo-one-phoenix/
- Also active in San Francisco
- Coming to Los Angeles
- App-based
  - Waymo One
- All-electric Jaguar

WHAT IS GENERATIVE AI?



Generative AI refers to the ability of AI platforms to generate new content, such as:

- Images
- Music
- Video
- Voice
- Text

It operates on the principle of learning patterns and can be used to create content.

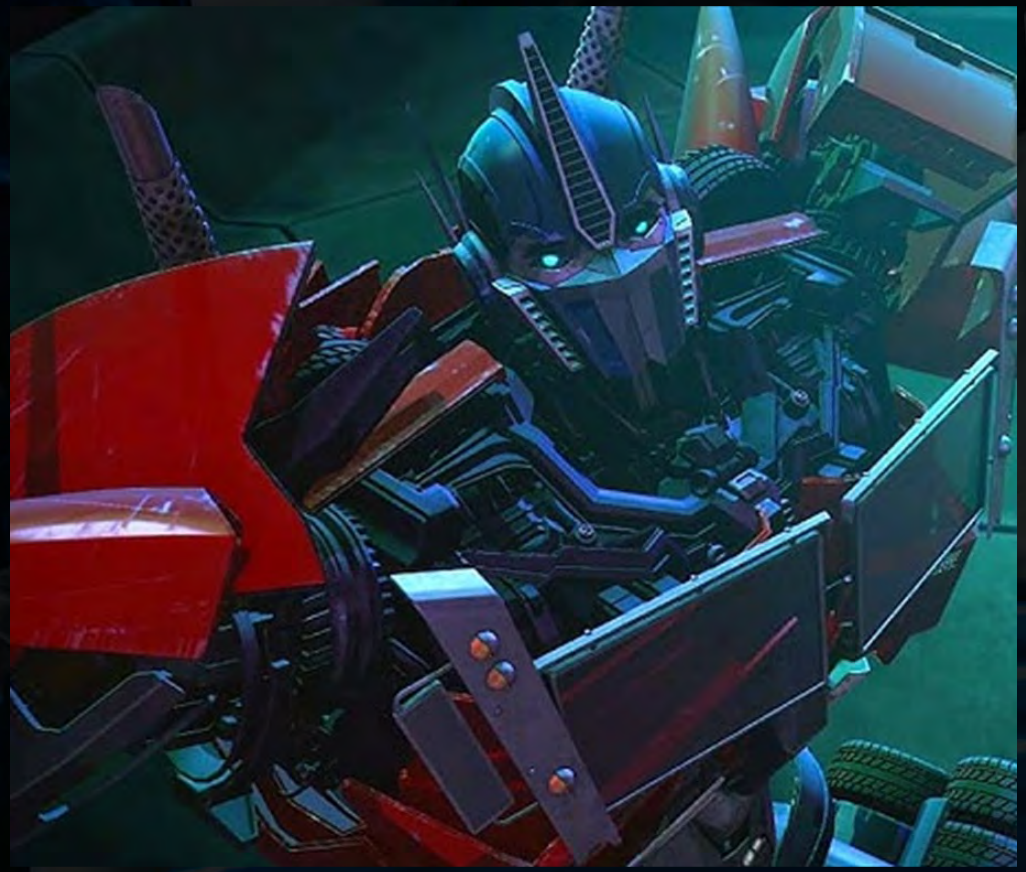



simplilearn

What is Generative AI?




CHAT GPT 3.5/5.0 EXPLAINED



Chat GPT 3.5/5.0

Chat –Chat bot

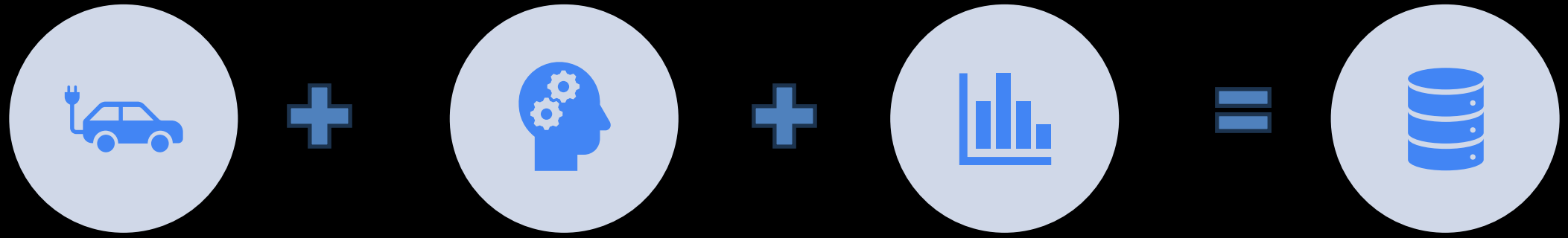
G – Generative (generates content)

P – Pretrained (trained on a large corpus of public text data, i.e., Wikipedia, WSJ, Enron, books)

T – Transformer (neural network architecture)

3.5/5.0 - Version

AI INFRASTRUCTURE



ENERGY (GW)

POWER PLANTS

NATURAL GAS

NUCLEAR (FISSION V. FUSION

AI CHIPS (GPU)

NVIDIA

AMD

TSMC

DATA

DIVERSE

DATASETS

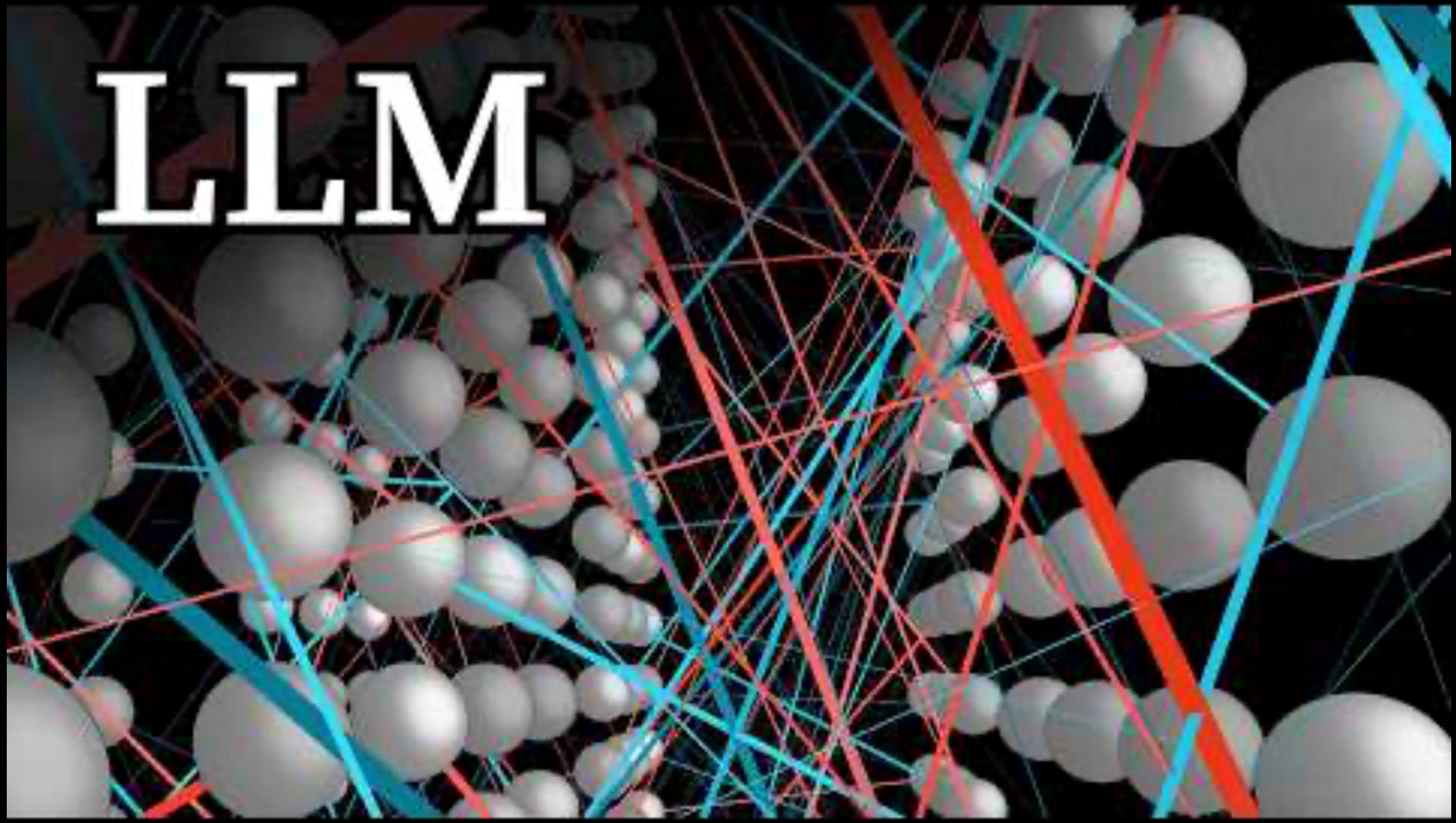
TEXT, VIDEOS, IMAGES, SOUND

DATA CENTERS

STARGATE

COLOSSUS

LLMS BRIEFLY EXPLAINED



AI as a Tool

1. Search for Resources
2. PDF Summarizer
3. Nutrition/Recipes
4. Medical (use 2 or more sources)
5. Research
6. Legal? (Be careful!)
7. Translation
8. Create Images

AI Privacy/Security & Voice Mode Hands-on Demo

Part 1 Privacy/Security

1. Open your browser, type **https://chatgpt.com/** or **Chat GPT app**
2. Go to settings
3. Review security/privacy options

Part 2 Voice-Mode

1. Click on ”voice mode” icon
2. Say “Hello ChatGPT, how’s it going?” “¿Hola Chat, cómo estás?

"UN GRAN PODER CONLLEVA UNA GRAN RESPONSABILIDAD"


WITH GREAT
POWER
COMES GREAT
RESPONSIBILITY


WITH GREAT ABILITY COMES GREAT
ACCOUNTABILITY.

FINAL WORDS

“In the Age of AI, the most future-ready skill is the ability to keep learning, adapting, and collaborating—with humans and machines.”

– ChatGPT 5.0

QUESTIONS?

VISION 2030
NONCREDIT
SUMMIT 2025

Artificial Intelligence in Healthcare

Kim-Leiloni T. Nguyen, MD, MPH
Mt San Antonio College
2024-2025 Sabbatical

Reimagining Noncredit Education for Equity and Economic Mobility

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Types of AI in HC

- Assistive AI
- Ambient AI
- Predictive AI
- Agentic AI

Patient's Assistive AI (Chat bot)

Completing tasks more efficiently

Making, reminding, cancelling & rescheduling appointments

Educating patients on general medical conditions

Answering medical questions

Renewing prescriptions

Staffing call centers 24/7

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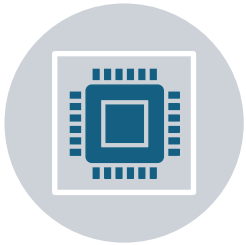
Clinician’s Assistive AI



Completing tasks more efficiently

Radiology: analyzing images

Pathology: analyzing images

Cardiology: analyzing ECG

Administrative Assistive AI

Making administrative tasks easier or more efficient

Coding (more accurate and efficient)

Obtaining prior authorization

Improving claim reimbursement rate

Drafting appeals if claims are denied

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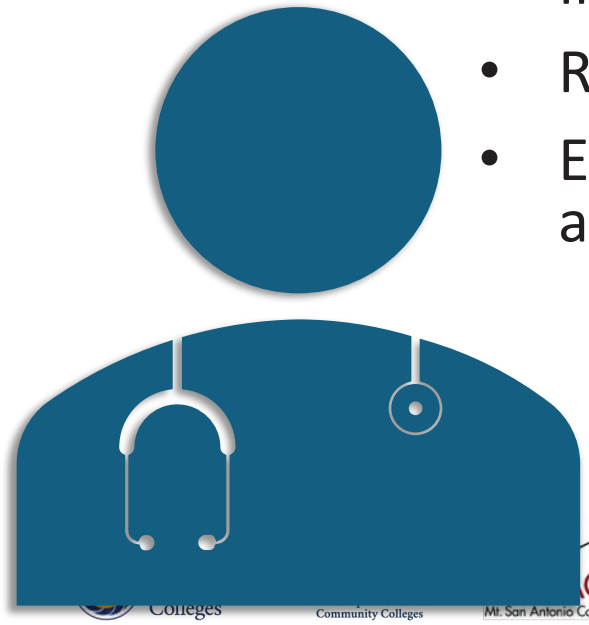
Ambient AI (silent assistant)

- Automating documentation
- Real time, recording and transcribing relevant info between clinician and patient
- Significantly reducing charting time w/ option to edit
- Interfacing with electronic health record seamlessly
- Receiving positive feedbacks from doctors, nurses, and patients
- Easing cognitive burden, saving time on documentation, and allowing more personal time



Ambient AI & Wearables

- Devices to monitor patient remotely, i.e. wear at home
- Real time recording into patient EHR
- HC without visiting office
- Improving HC access, especially in rural areas, if there is internet service
- Example: U of Miami Ophthalmology
- Reducing hospital stay, coming home earlier

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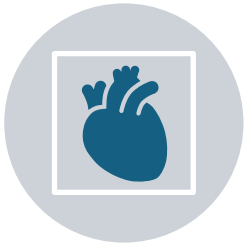
Predictive AI in Hospital

Forecasting future events based on historical and current data



Triaging, assessing risk of upcoming event (e.g. fall, heart attack, etc.)

HC team taking appropriate actions

Reducing hospital stays, improving outcomes

Predictive AI in Diagnosing

Developed AI app to detect mass in the throat by listening to patient's voice with 93% accuracy

Anthony Law, MD, PhD
Otolaryngologist
Emory University School of Medicine

https://news.emory.edu/stories/2025/06/hs_law_16-06-2025/story.html

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Predictive AI in Administration

Forecasting future events based on historical and current data

Managing supply inventories

Purchasing more/less based on past & present trends

Reducing waste with expirations of some items

Predictive AI in Scheduling

Forecasting future events based on historical and current data

Scheduling of operating rooms usage

Scheduling of staff

more in-house staff during busy times

remote monitoring and less staff at other times

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Predictive AI in Research

Forecasting future events based on historical and current data

Designing drug treatment for specific population

Matching best candidates for clinical trials

Example: City of Hope and cancer treatment trials

The Latest: Agentic AI

More sophisticated than generative AI

Interaction w/ environment

Perception, reasoning, action, learning

Examples: self-driving car

supply chain management
cybersecurity
healthcare

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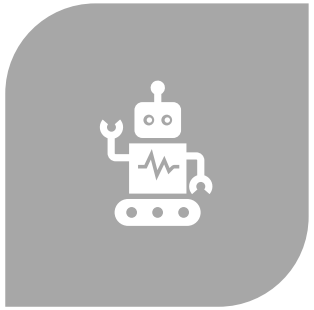
Using 6 AIs to be more like agentic AI

HTTPS://XAIA.HEALTH/



24/7 MENTAL HEALTH COMPANION W/ REMOTE MONITORING

TAKING HISTORY & ASSESSING PATIENTS

SENDING NOTES TO CLINICIANS AND EHR

Future of AI in Healthcare

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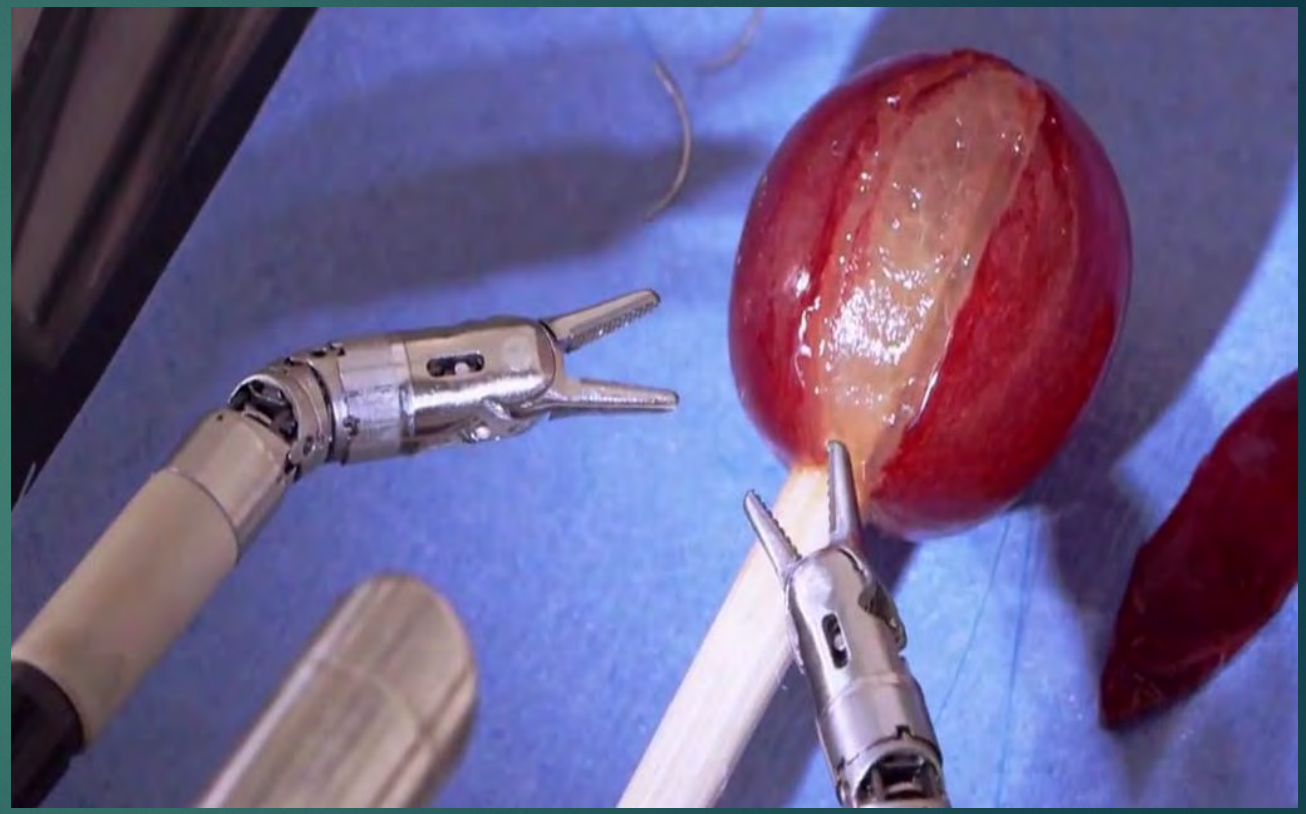
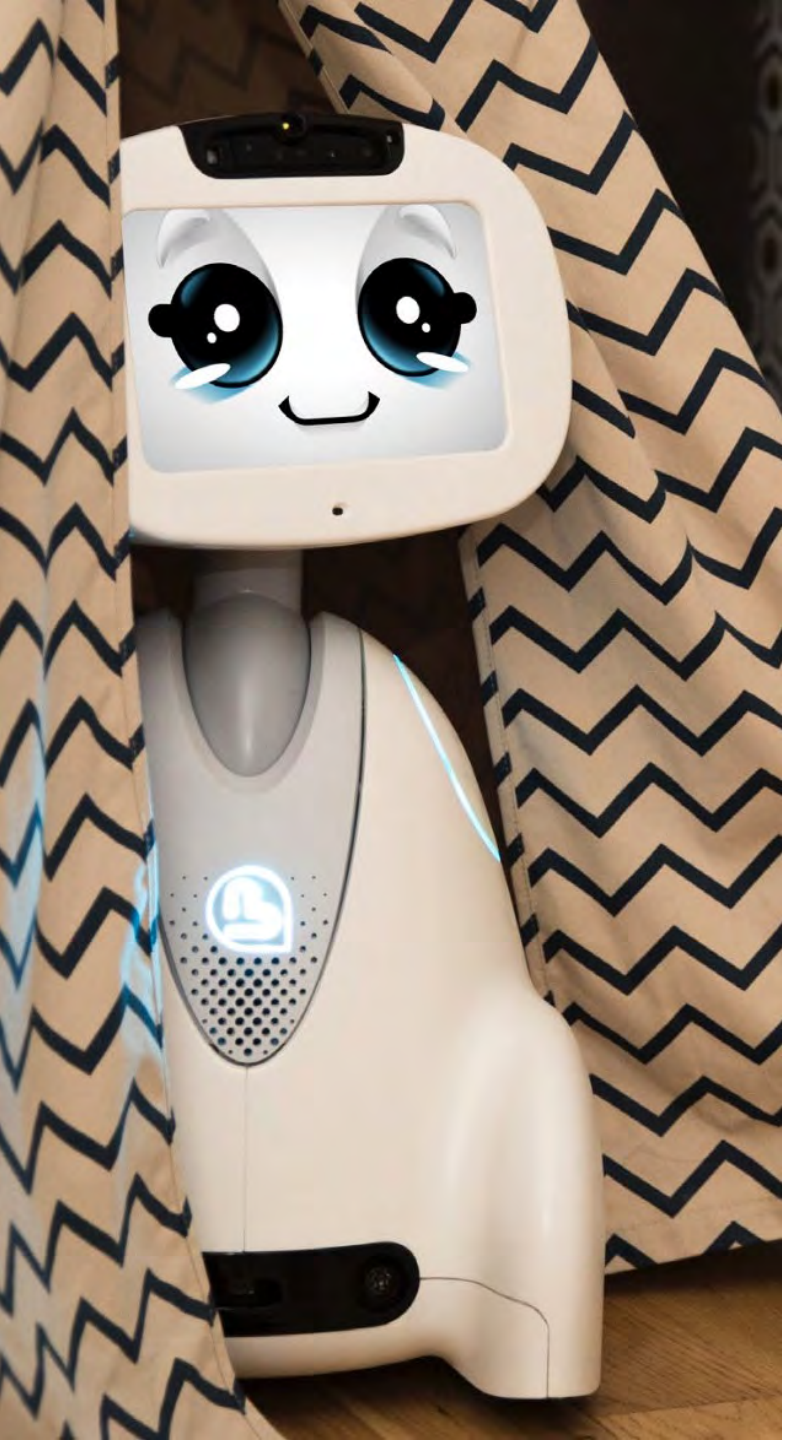
Surgery

daVinci Robot-Assisted Surgery 18-yr history

With AI, autonomous surgery, testing on dead pigs





Companion Robots

For elderly, sick, or mentally ill who are lonely

Can call 911, talk, and complete small tasks

Telepresence Robots

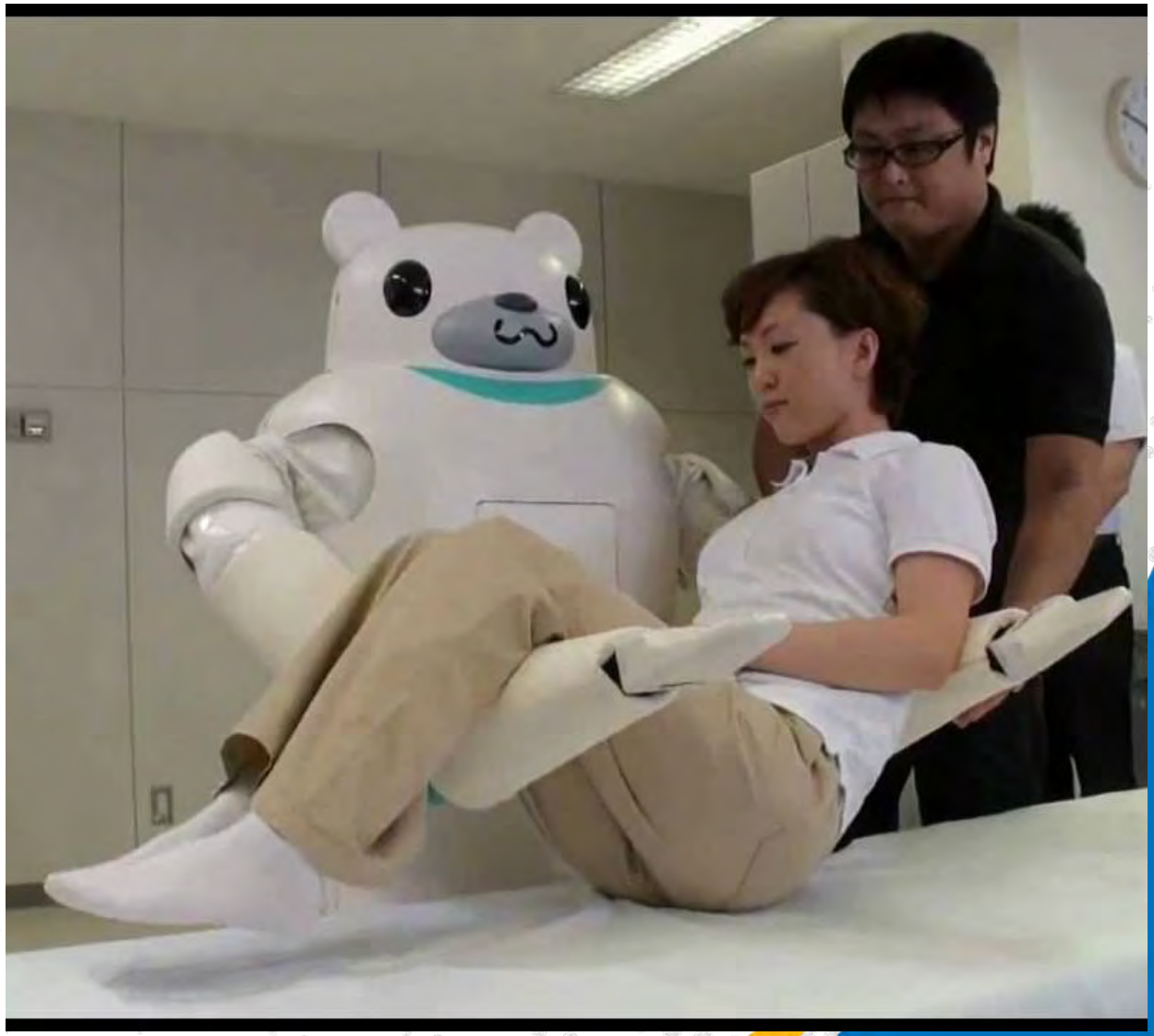
Connecting patients in rural areas or foreign countries with experts anywhere in the world

Consultation in real-time

OF
ING EDUCATION

Robotic Nurses

- Complete digital paperwork
- Take vital signs
- Monitor patient's condition
- Moving equipment, carts, gurneys



Pharmabotics

UCSF x 5 years

Giant vending machine for meds

Epidemiology

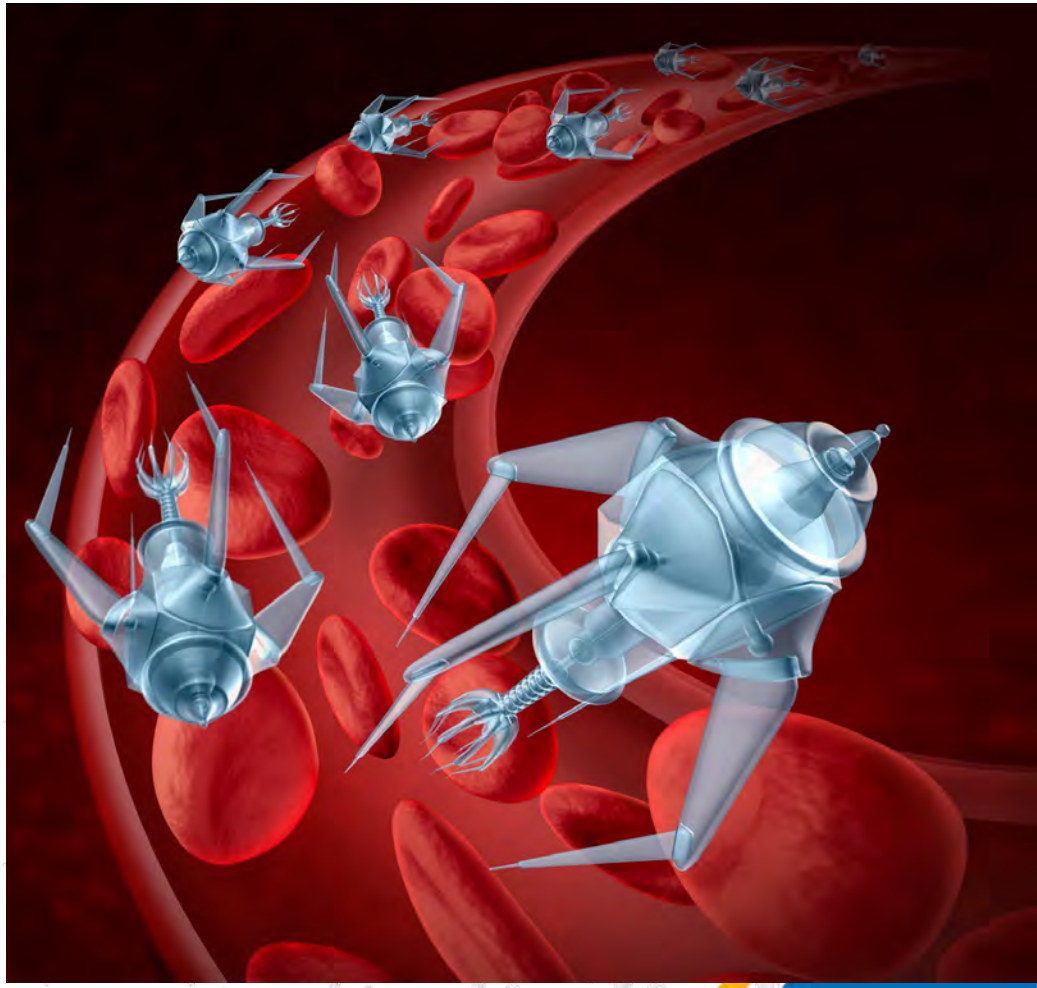
AI-enabled robots to fight pandemic

Learn from databases to predict when and where is an outbreak and to control it

AIME system in Malaysia, 85% accuracy with dengue fever

Antibacterial Nanorobots

- Gold nanowires coated with platelets and red blood cells
- Mimic a bacterium and its toxin's target then trapping bacteria in the nanowire mesh
- Controlled with ultrasound for localized infections
- Solution for antibiotic-resistant strains



Future Potentials: Neuroprosthesis

AI & brain implant to voice thoughts for those who can't speak

A streaming brain-to-voice neuroprosthesis to restore naturalistic communication | Nature Neuroscience

Littlejohn, K. T., et al. (2025). A streaming brain-to-voice neuroprosthesis to restore naturalistic communication. *Nat. Neurosci.* **28**, 902–912.

Future: must be AI literate!

Practice of HC will be extremely different than in the past

Personalized HC

Prevention, earlier diagnoses, precise treatment, better prognoses

More quality time with clinicians

More equitable (access)

"…future of medicine won't be shaped by a simple choice between human or artificial intelligence, but by our ability to understand their respective strengths and limitations, and to orchestrate their collaboration in ways that truly benefit patient care…finding the right balance between human expertise and artificial intelligence in ways that enhance and transform medical practice. This may require us to let go of some preconceptions and embrace new models that might initially feel counterintuitive but ultimately lead to better patient outcomes."

Eric Topol, MD
Cardiologist (1300+ peer-reviewed articles)
Scripps

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Series of short videos on

Mt SAC's Canvas and YouTube

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Thank you

Questions
& Feedback

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