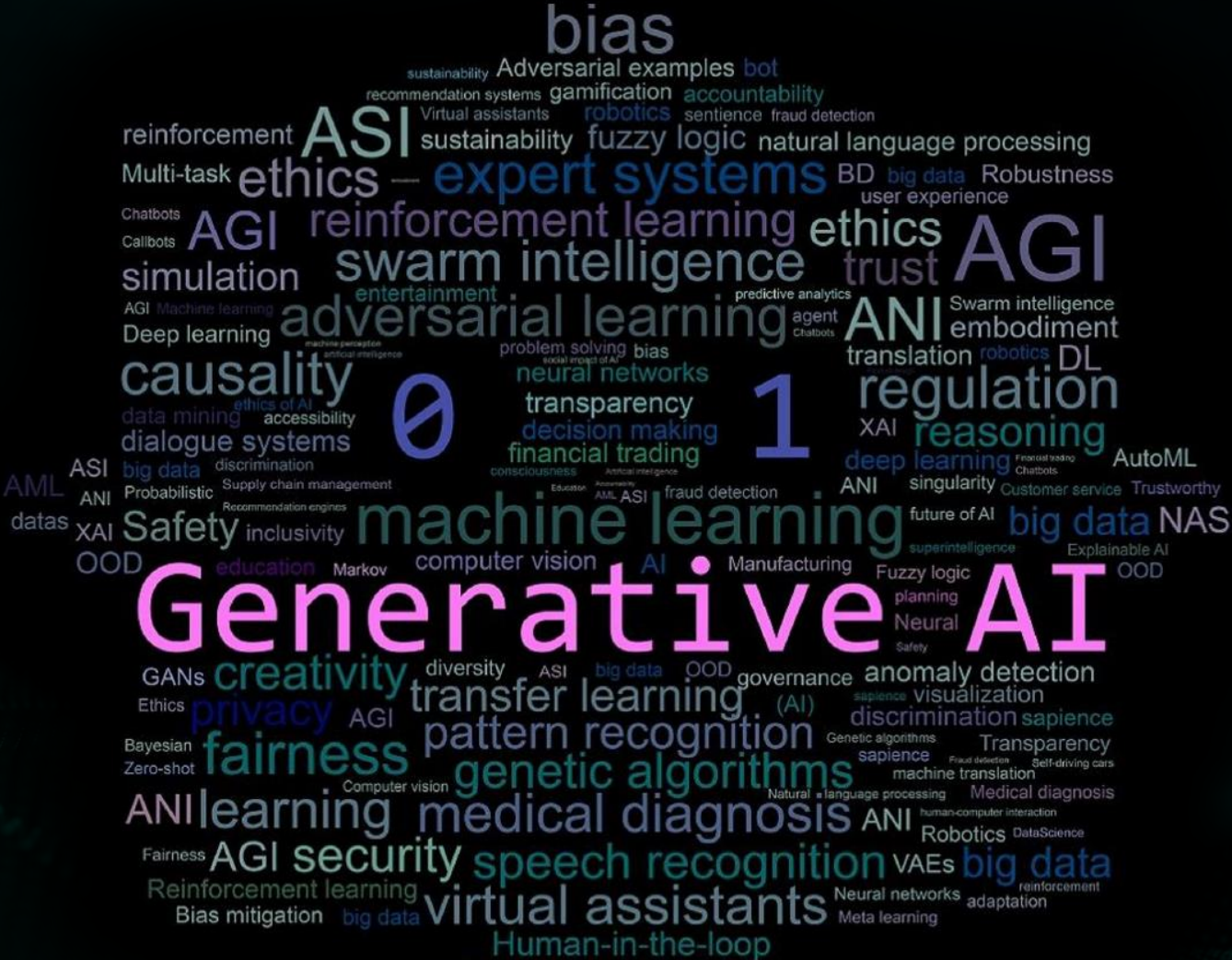


Innovating Healthcare for the Future: The Role and Prospects of AI

Inchul Hwang, EVP, Samsung Electronics

26th Feb

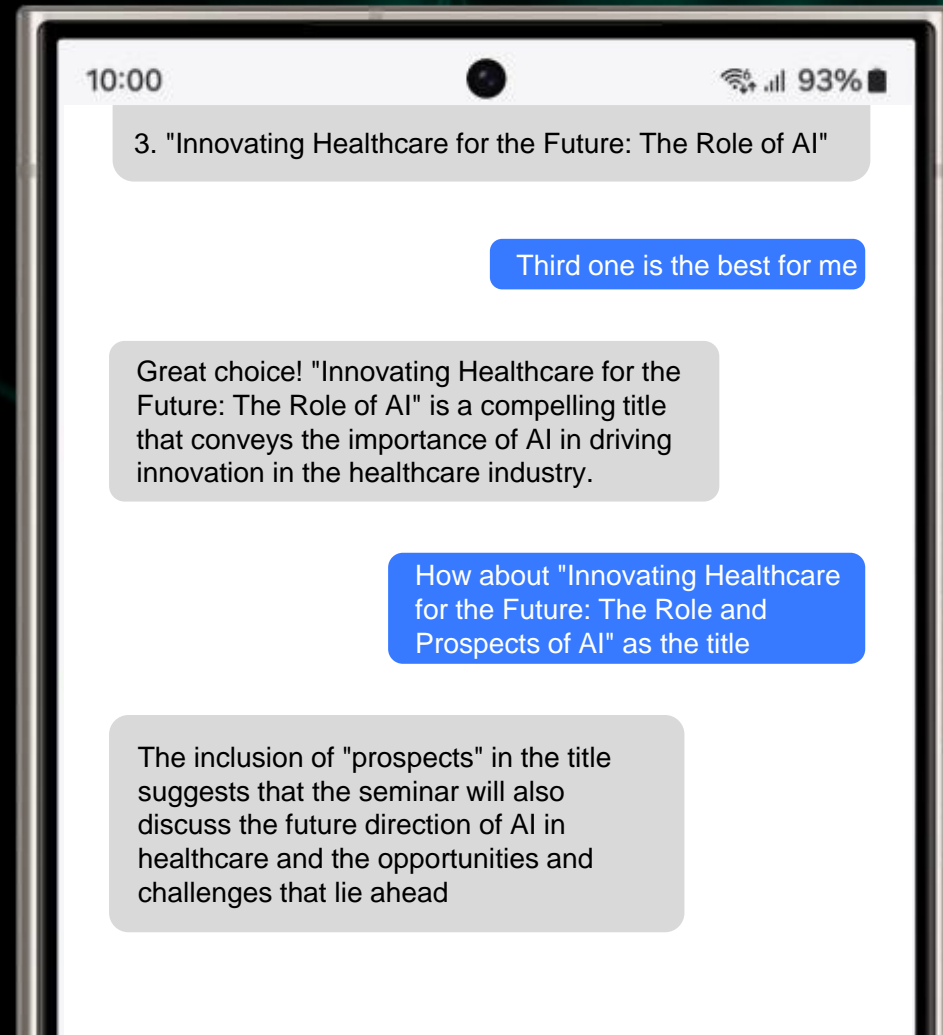
AI Trend



* <https://www.itprotoday.com/industry-perspectives/unexpected-generative-ai-predictions-2024#close-modal=>

How to generate the Title with Gen AI

Innovating Healthcare for the Future: The Role and Prospects of AI



What is AI?

Intelligence
demonstrated
by machines

Perception



Machines replicate human
mind

Planning / Reasoning / Generate



Algorithm



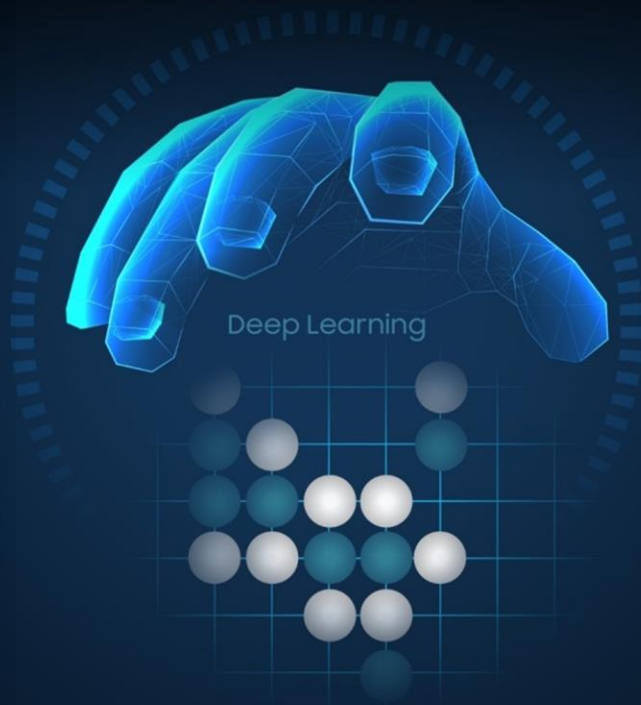
Big Data



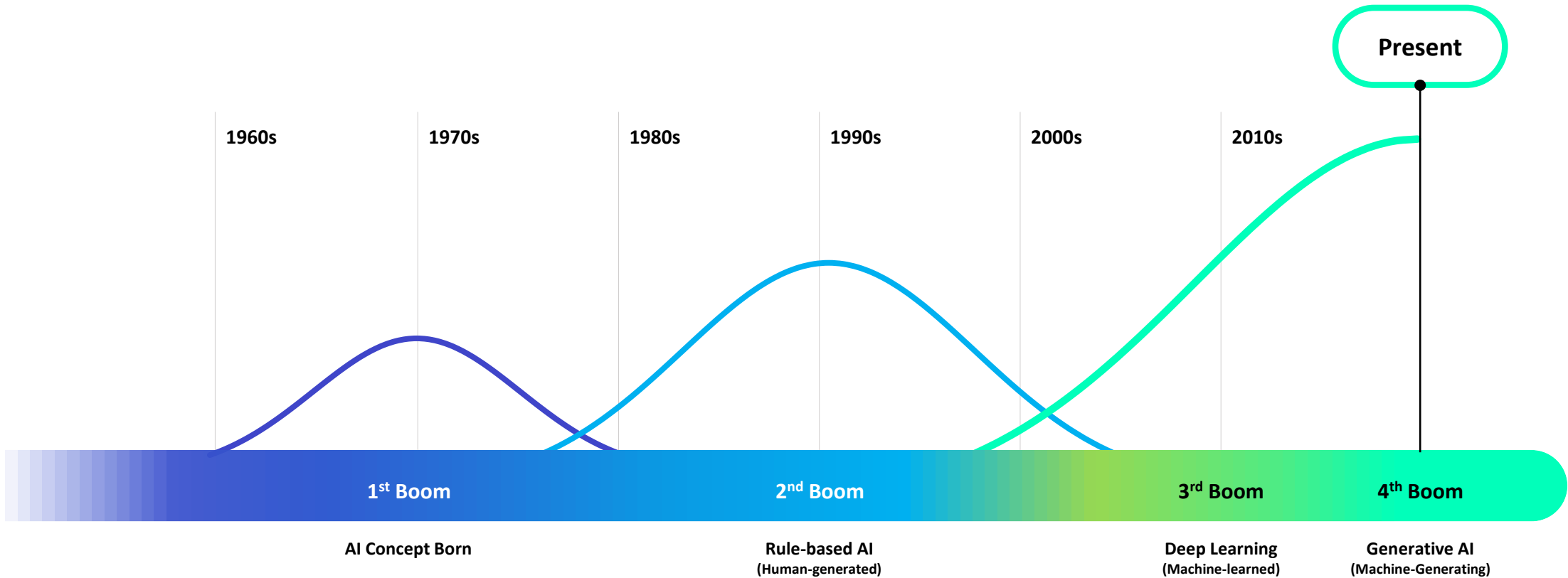
Computing

What can the recent AI do?

Solving Problems which Human-generated S/W cannot solve



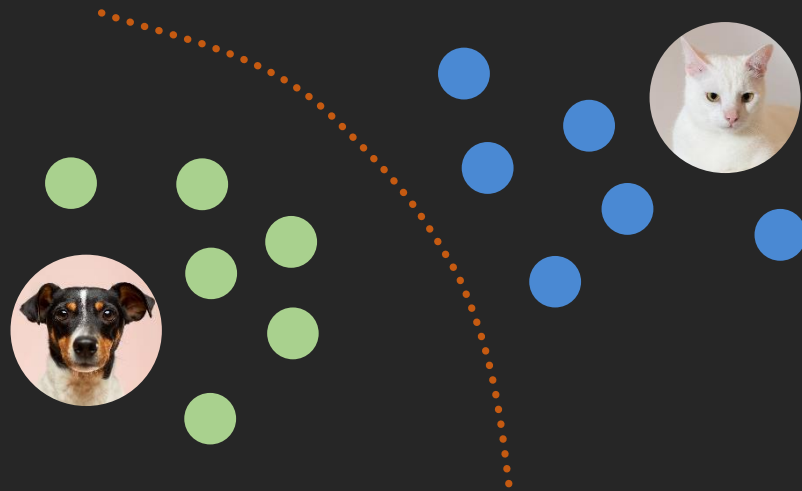
How has AI been developed?



Generative AI

AI capable of generating text, images or other media

Classification Model



4.2M

61M

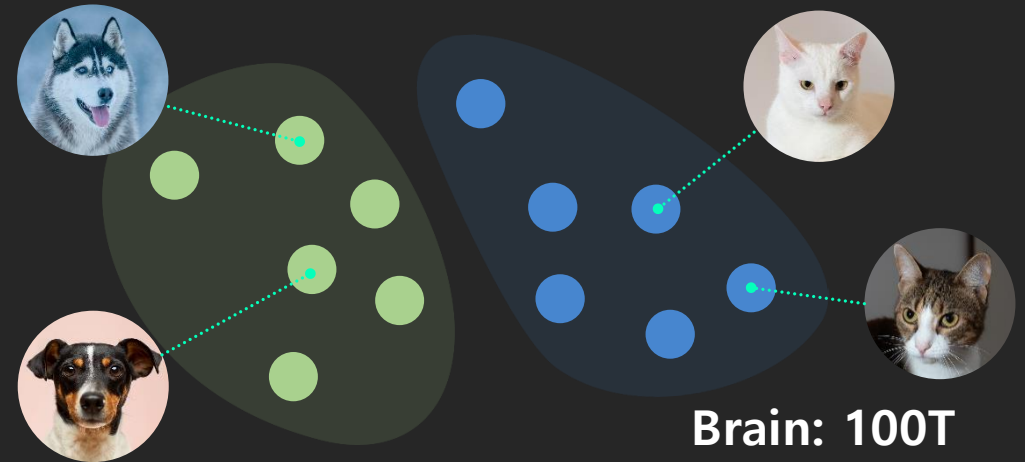
143M

MobileNet

AlexNet

VGGNet-19

Generative Model



Brain: 100T

540B

1.5B

137B

175B

GPT2

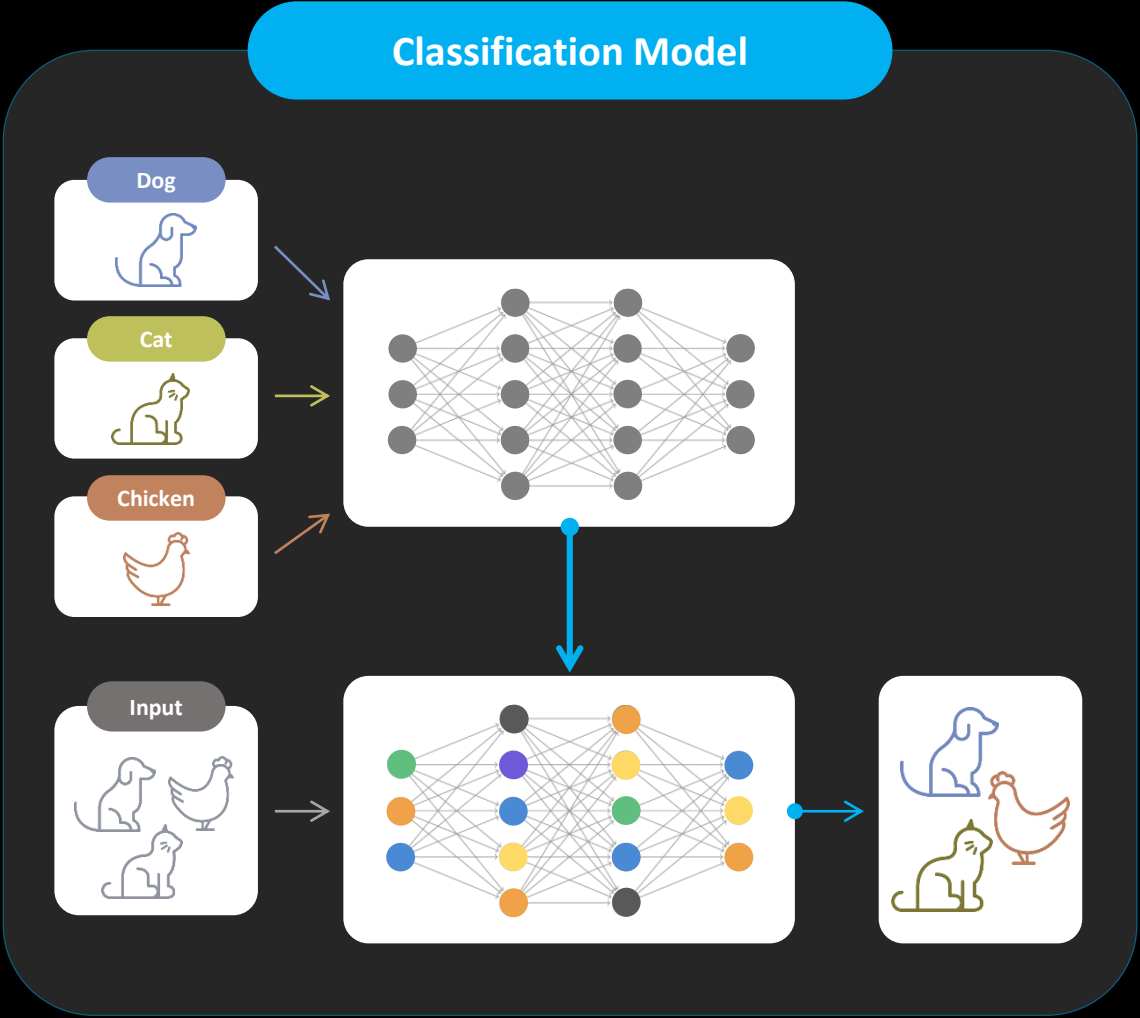
LaMDA

GPT-3

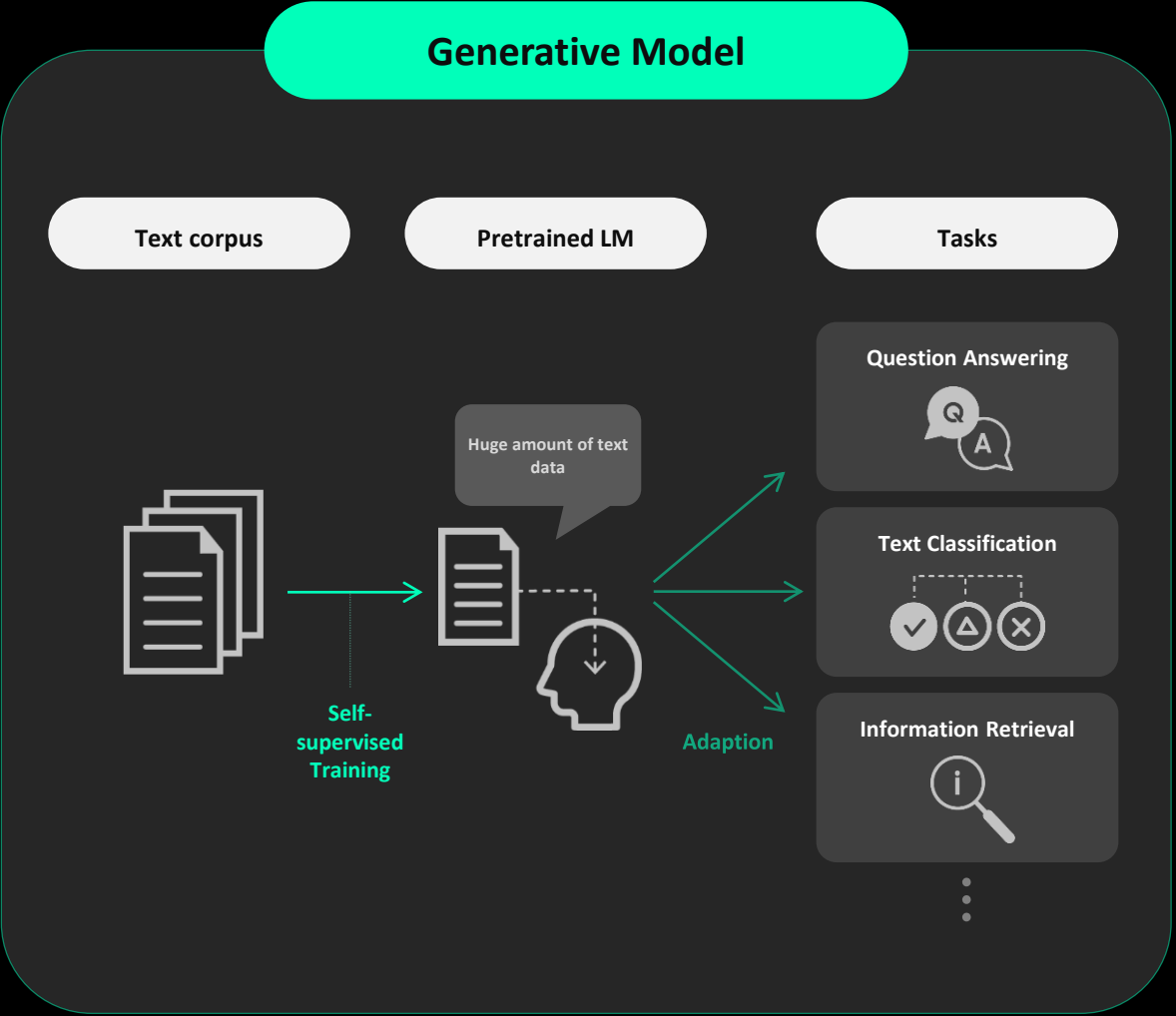
PaLM

AI model Training Process

Classification Model

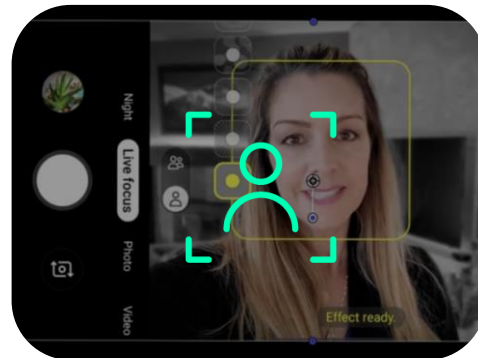
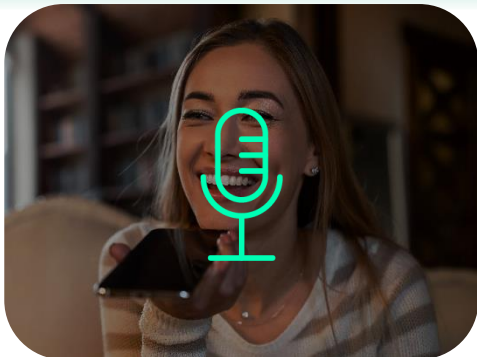


Generative Model



AI also innovates user experience in devices

Optimized user experience considering personal preference and current context

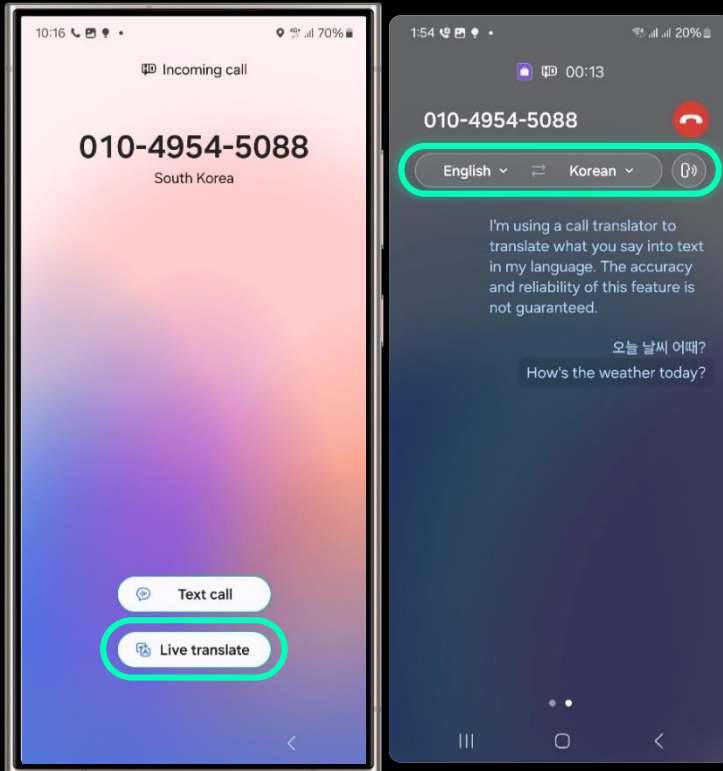


Galaxy AI: Translate

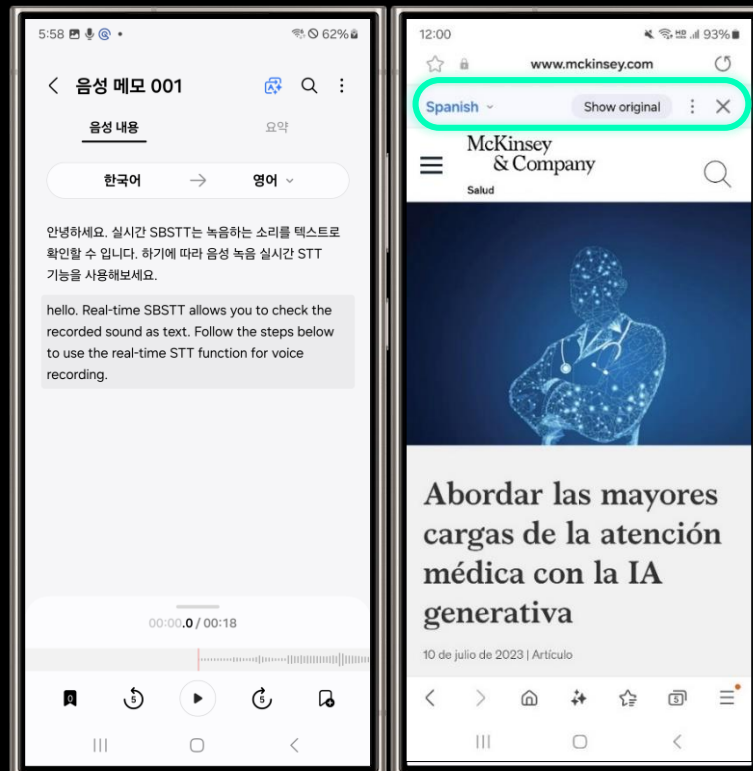


Translate

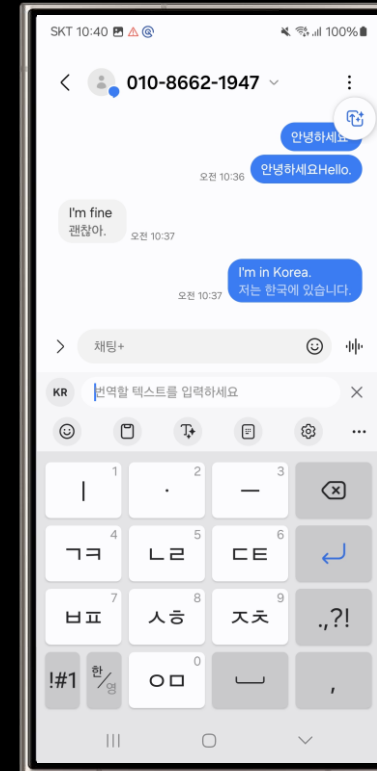
Live Translation



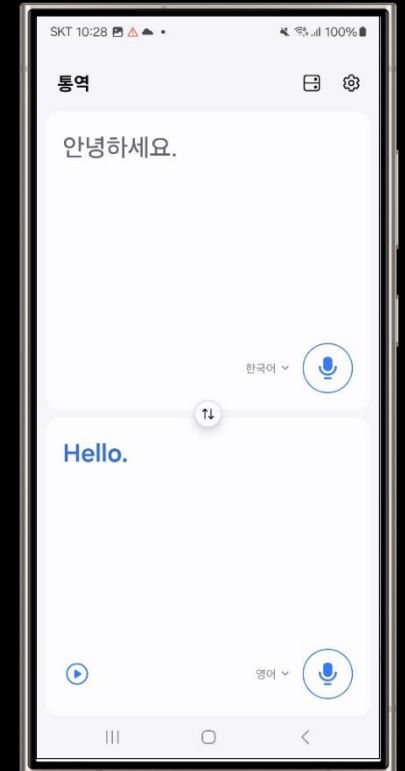
Voice note & Browser translation



Chat translation



Interpretation



Galaxy AI: Summary, Style

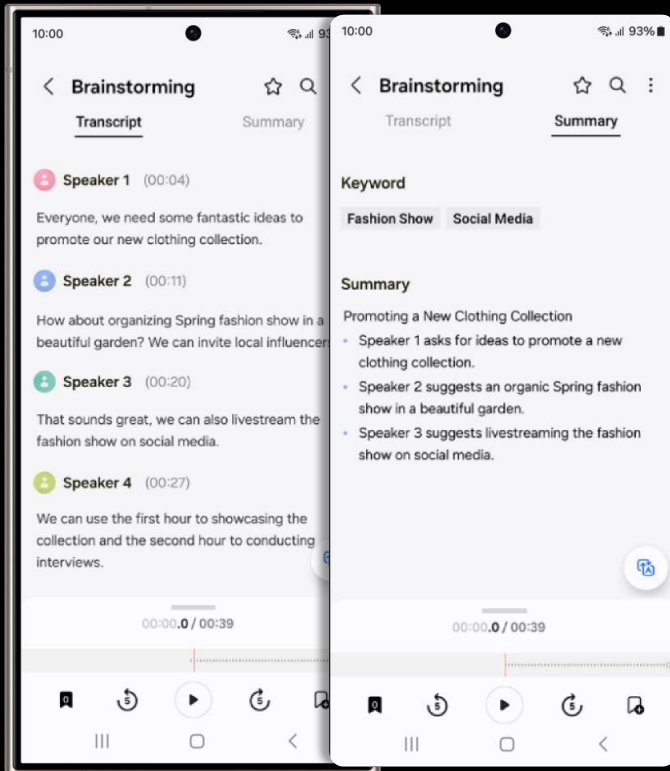


Summary



Style

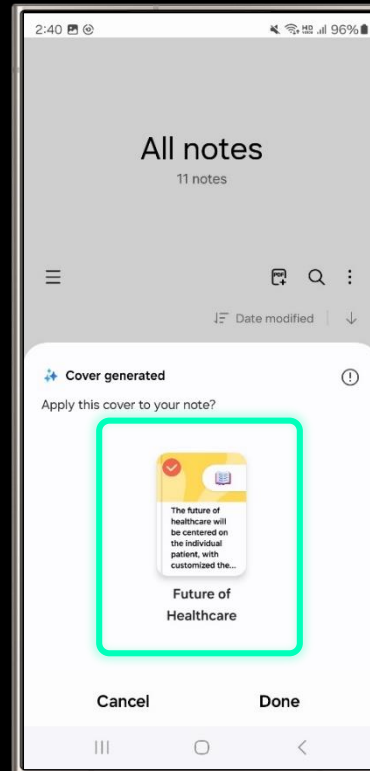
Speaker recognition recording & summarization



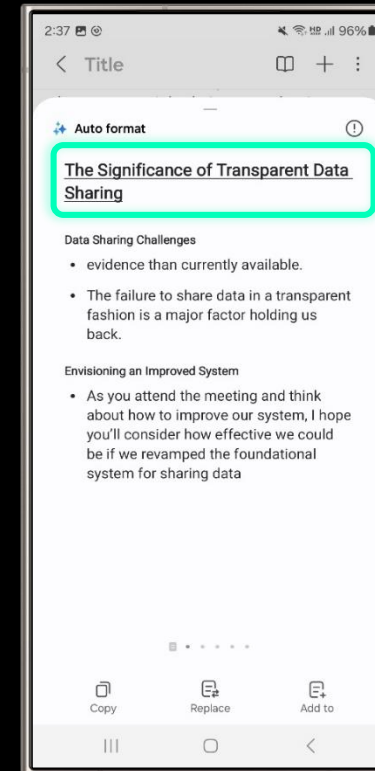
Summarization



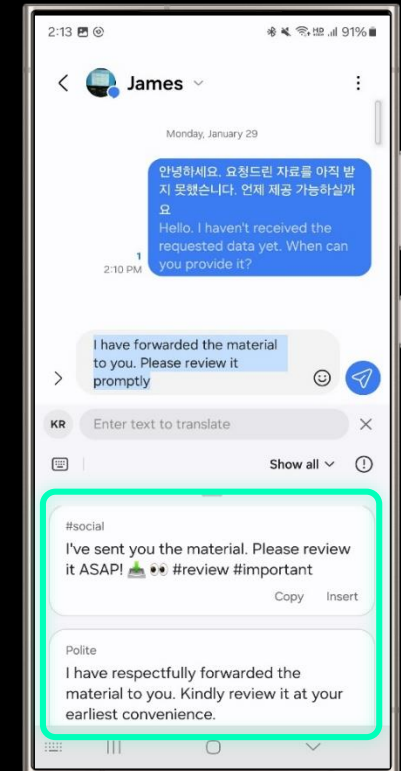
Cover



Format



Style, Emoji

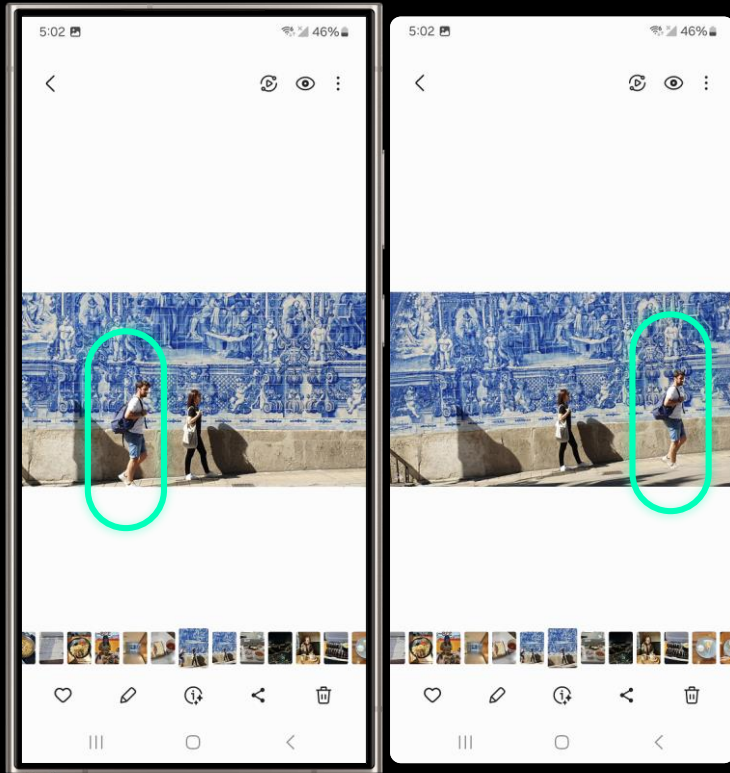


Galaxy AI: Image



Image

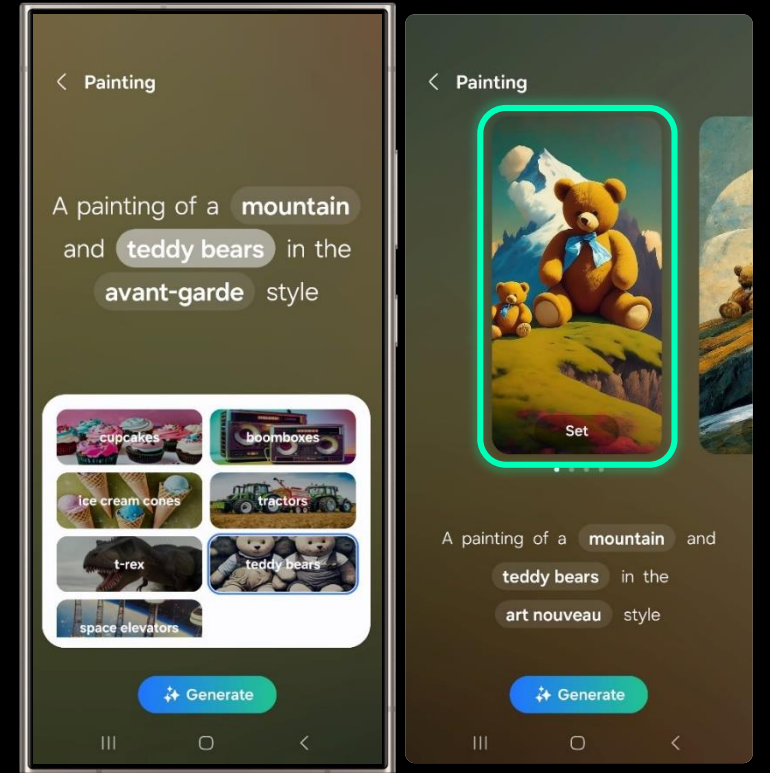
In/Out Image



Weather/Date Wallpaper



AI Wallpaper



Enabler(1/2) Samsung Gen AI (Gauss)

Samsung's Generative model

Language



- Natural and friendly conversation
- Multilingual support
- Translating contents
- Summarizing texts
- Writing draft mail
- Making answers for queries

Image



- Specialized in Generating, Editing and Converting images
- Handle many images generated in Samsung devices

Code



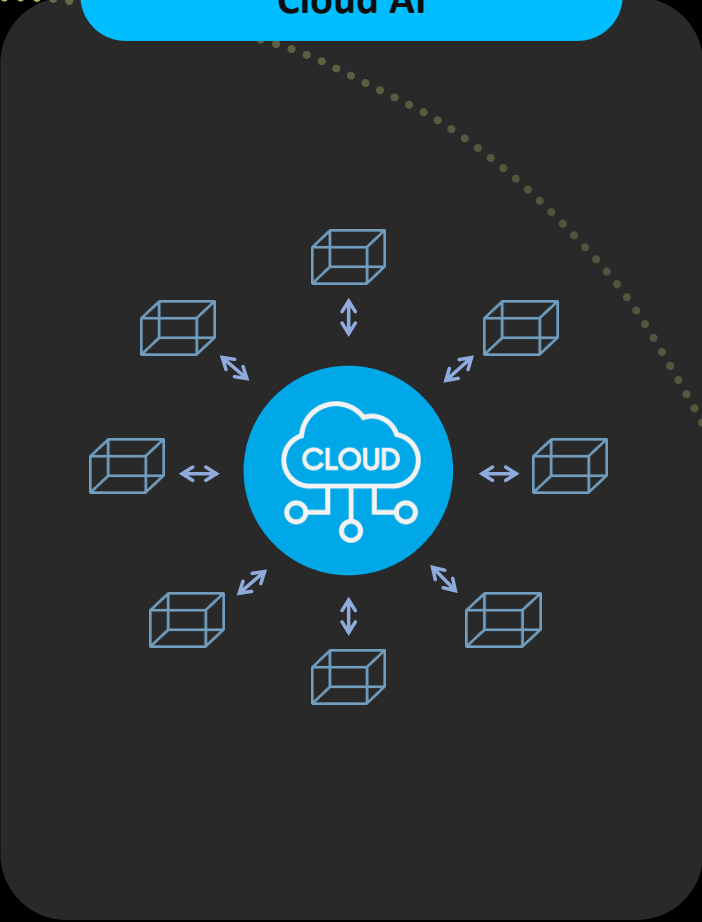
- Optimized code generation for Samsung product software
- Natural language is converted into code


Enabler(2/2) On Device AI

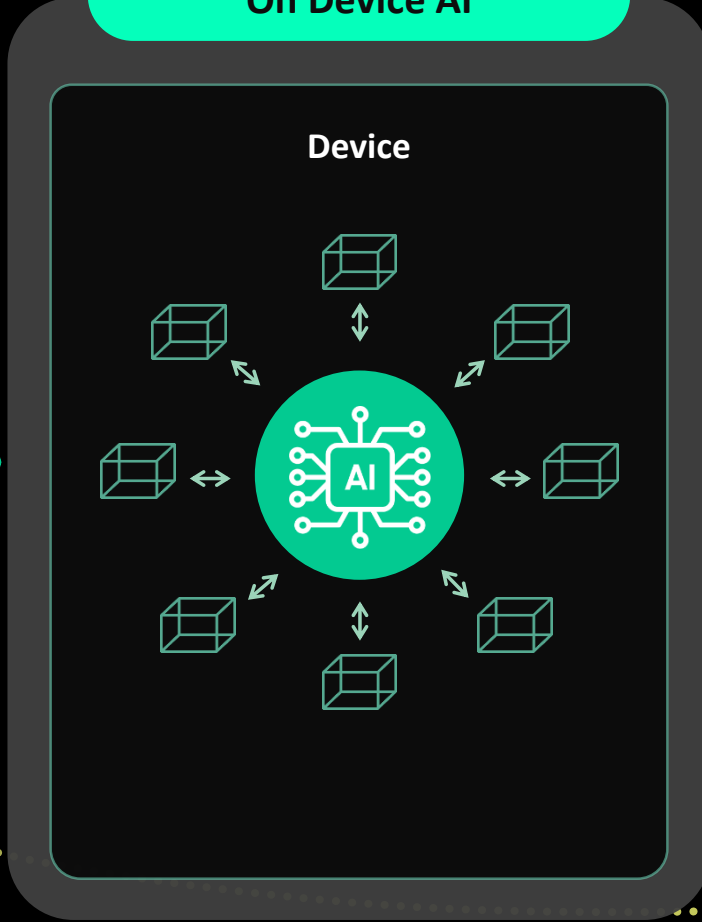
AI Cost

Cloud AI

On Device AI

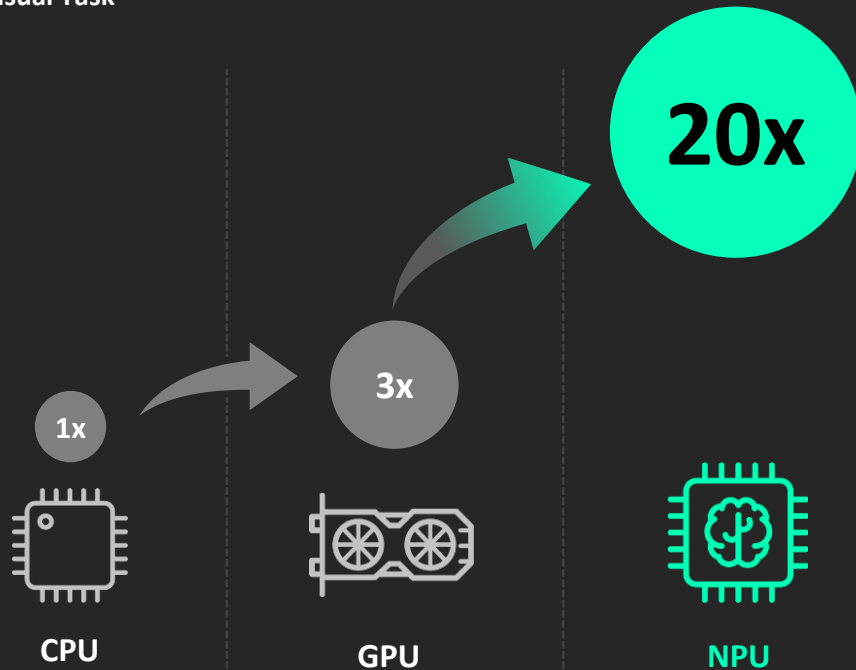


-  Privacy Protection
-  Reliable AI
-  Personalized
-  Fast Response

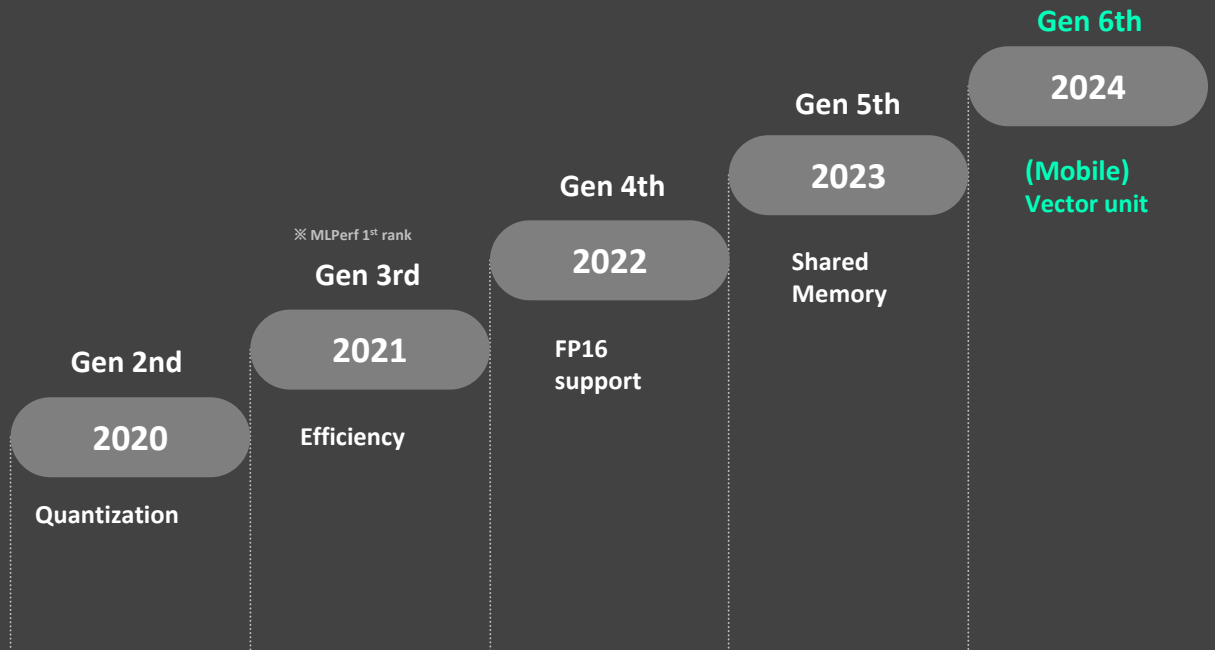


Enabler(2/2) On Device AI (NPU)

* Visual Task

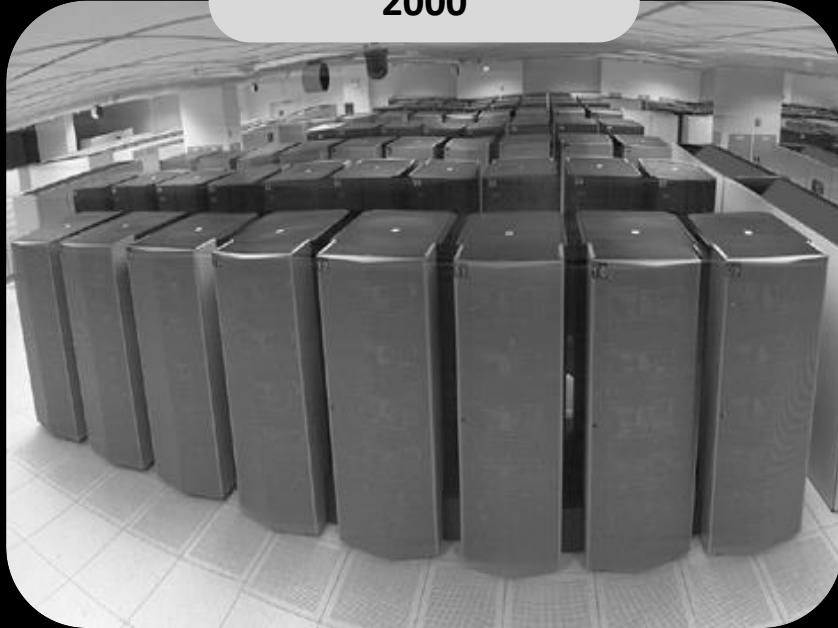


Samsung Mobile NPU roadmap



NPU Now

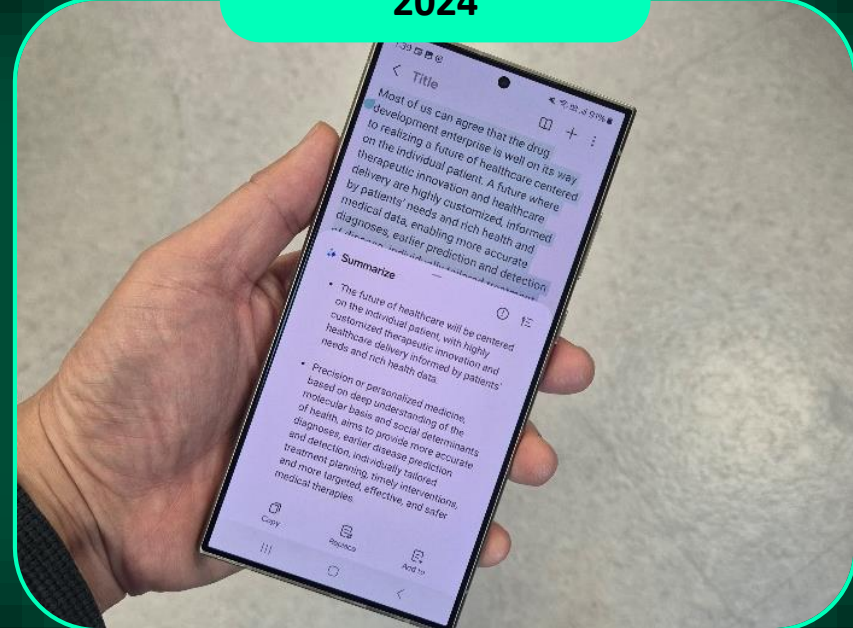
2000



- IBM ASCI white supercom
- 12 TFLOPS operation
- nuclear weapons stockpile
- astronomy, energy, human genome science and climate change research.




2024



- Samsung Galaxy S24 Ultra
- > 45 TOPS operation
- Live translate, Generative Edit

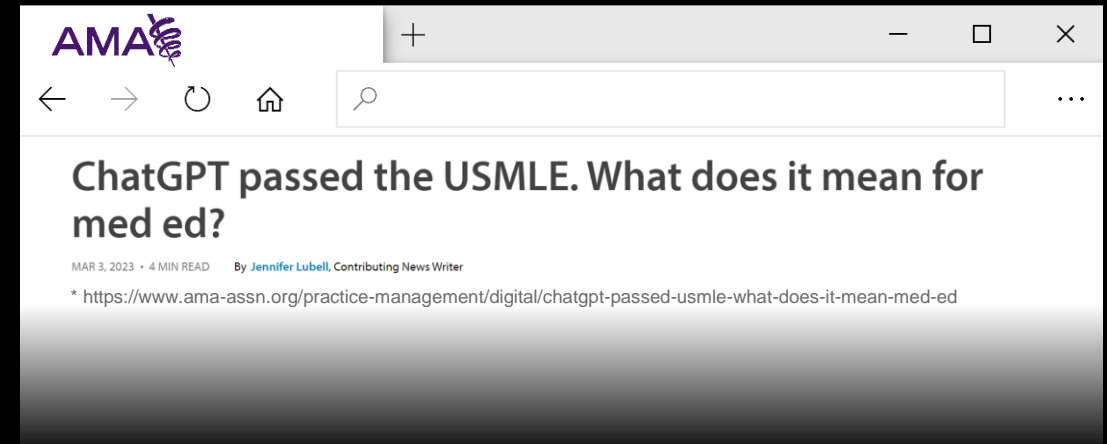
Gen AI can pass Medical licensing



The Washington Times
America's Newspaper

AI language bot ChatGPT can pass parts of business, law and medical exams

* <https://www.washingtontimes.com/news/2023/jan/29/chatgpt-ai-language-bot-can-pass-business-law-and-/>



AMA

ChatGPT passed the USMLE. What does it mean for med ed?

MAR 3, 2023 • 4 MIN READ By [Jennifer Lubell](#), Contributing News Writer

* <https://www.ama-assn.org/practice-management/digital/chatgpt-passed-usmle-what-does-it-mean-med-ed>

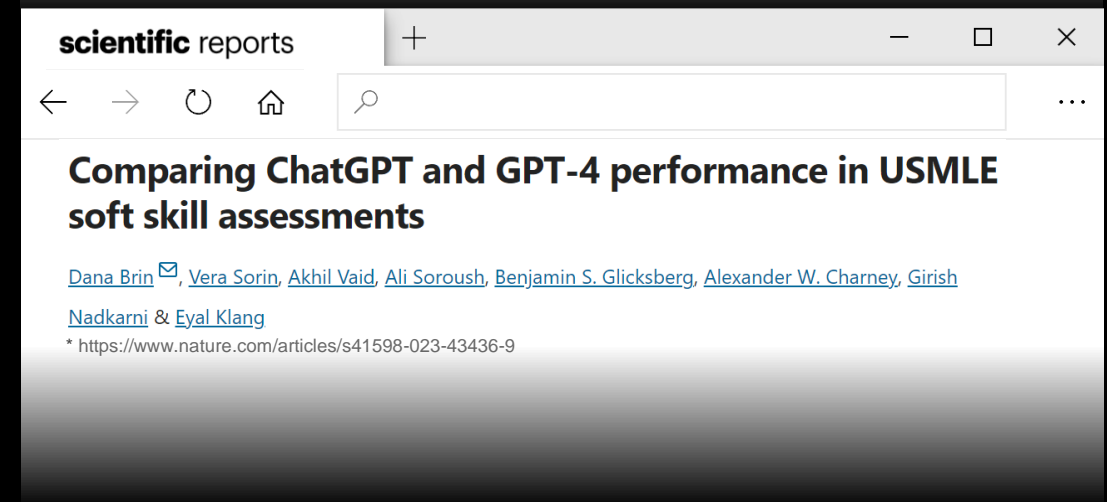


TechTarget HEALTH IT ANALYTICS
HEALTH IT ANALYTICS
enables clinicians to work better

ChatGPT Passes US Medical Licensing Exam Without Clinician Input


ChatGPT achieved 60 percent accuracy on the US Medical Licensing Exam, indicating its potential in advancing artificial intelligence-assisted medical education.

* <https://healthitanalytics.com/news/chatgpt-passes-us-medical-licensing-exam-without-clinician-input>



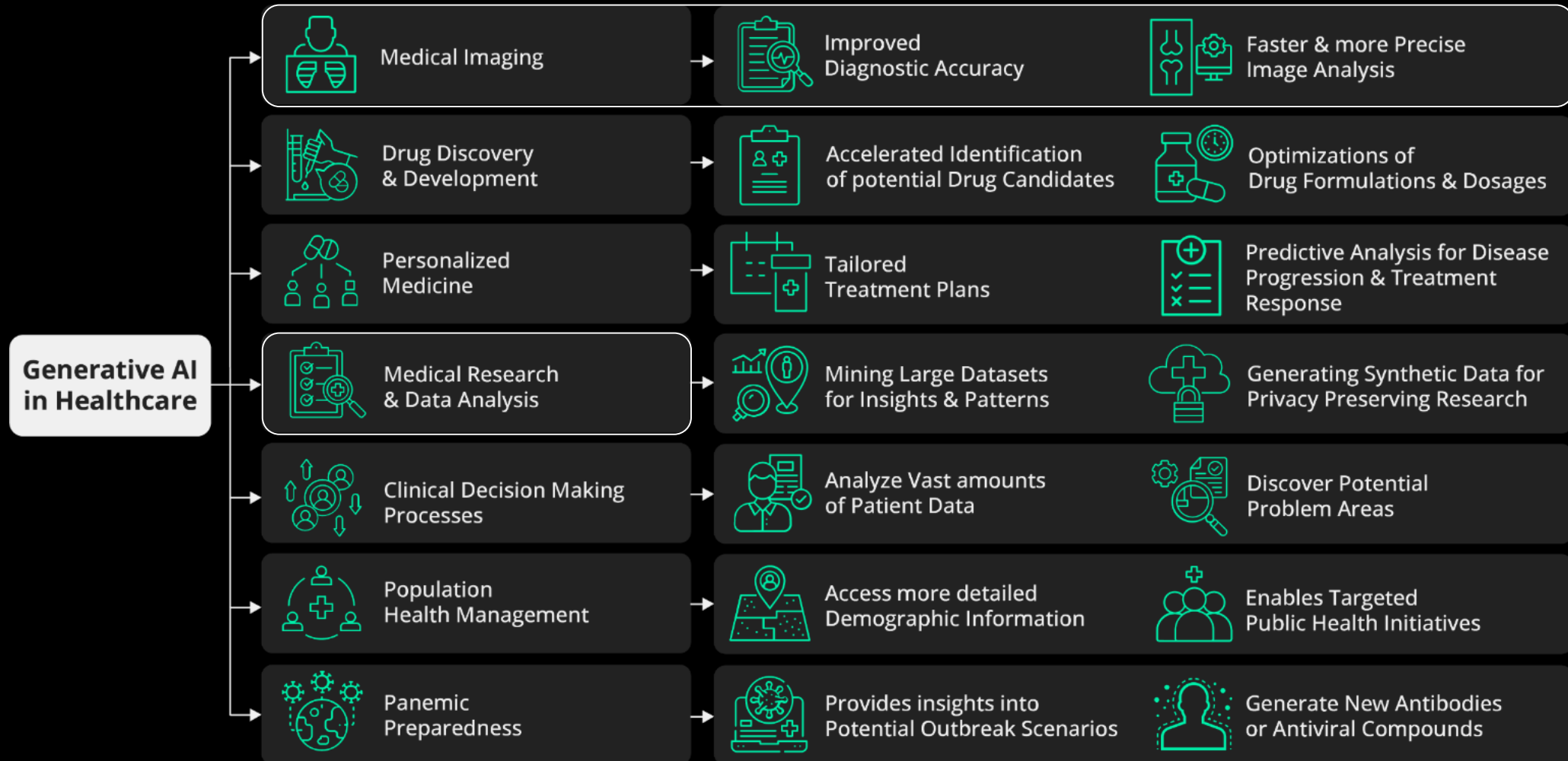
scientific reports

Comparing ChatGPT and GPT-4 performance in USMLE soft skill assessments

[Dana Brin](#) , [Vera Sorin](#), [Akhil Vaid](#), [Ali Soroush](#), [Benjamin S. Glucksberg](#), [Alexander W. Charney](#), [Girish Nadkarni](#) & [Eyal Klang](#)

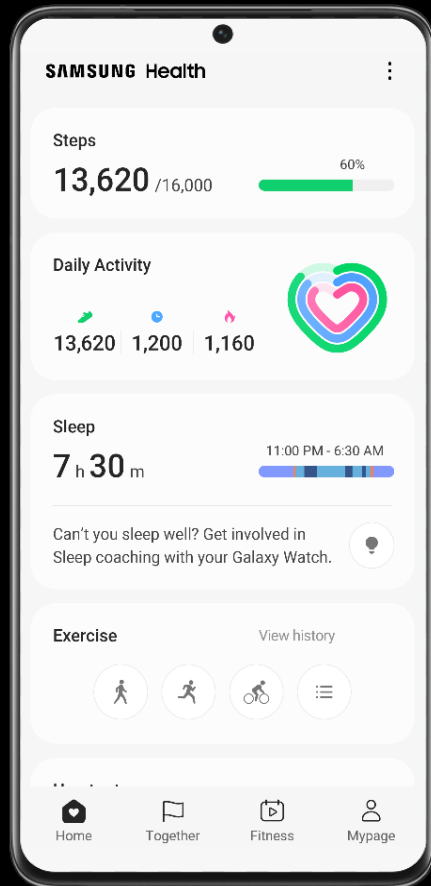
* <https://www.nature.com/articles/s41598-023-43436-9>

Healthcare Use Cases



Healthcare with Samsung: Samsung Health

Seamless cross-device experience within Galaxy ecosystem



Tracking and Coaching to stay fit



Exercise

Nutrition

Better sleep and relax your mind



Sleep

Mindfulness

Monitor your health



BP

ECG

IHRN

Samsung's Intelligent Health Platform

AI to secure the performance of algorithms that measure health status



Personalized HR Zone



Sleep Tracking



AI Based Healthcare Insights



Enhancing Algorithm Accuracy

Samsung Healthcare Devices

Combining leading technology to improve the quality of people's lives



Ultrasound System

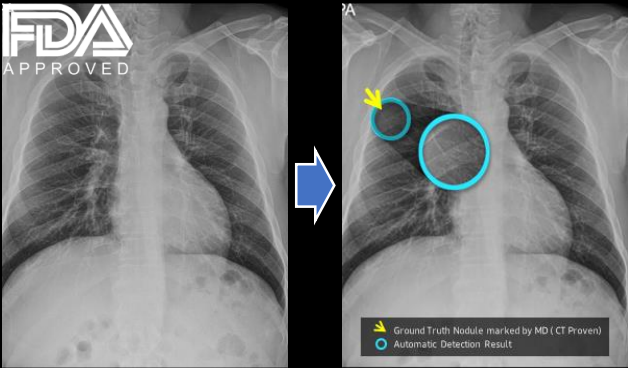


Digital Radiography

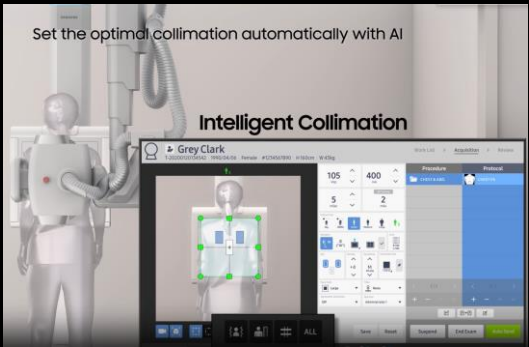


Computed Tomography

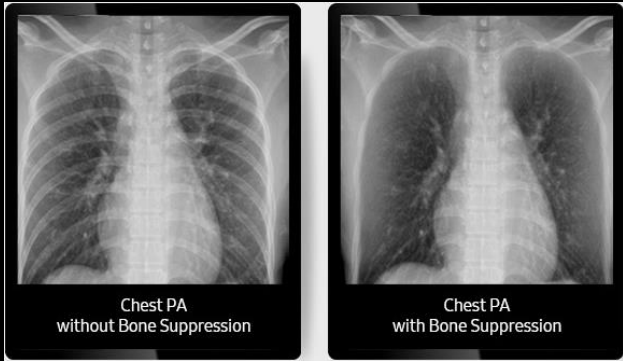
Samsung Healthcare Devices AI



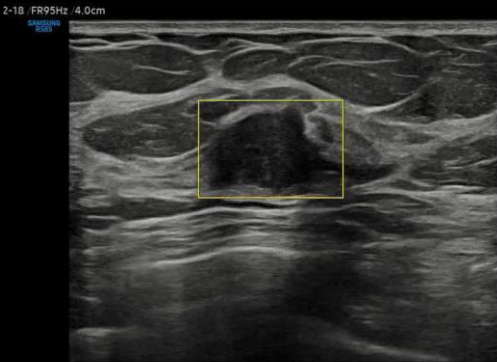
On Device Chest CAD



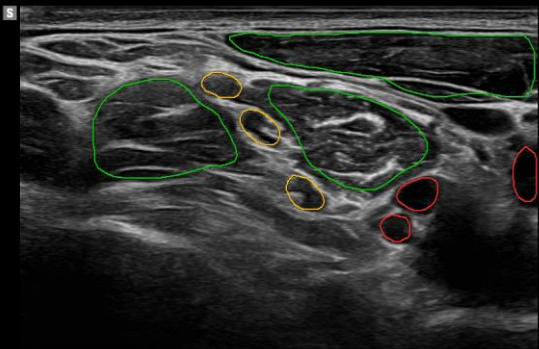
Auto collimation



Bone suppression



Live BreastAssist™



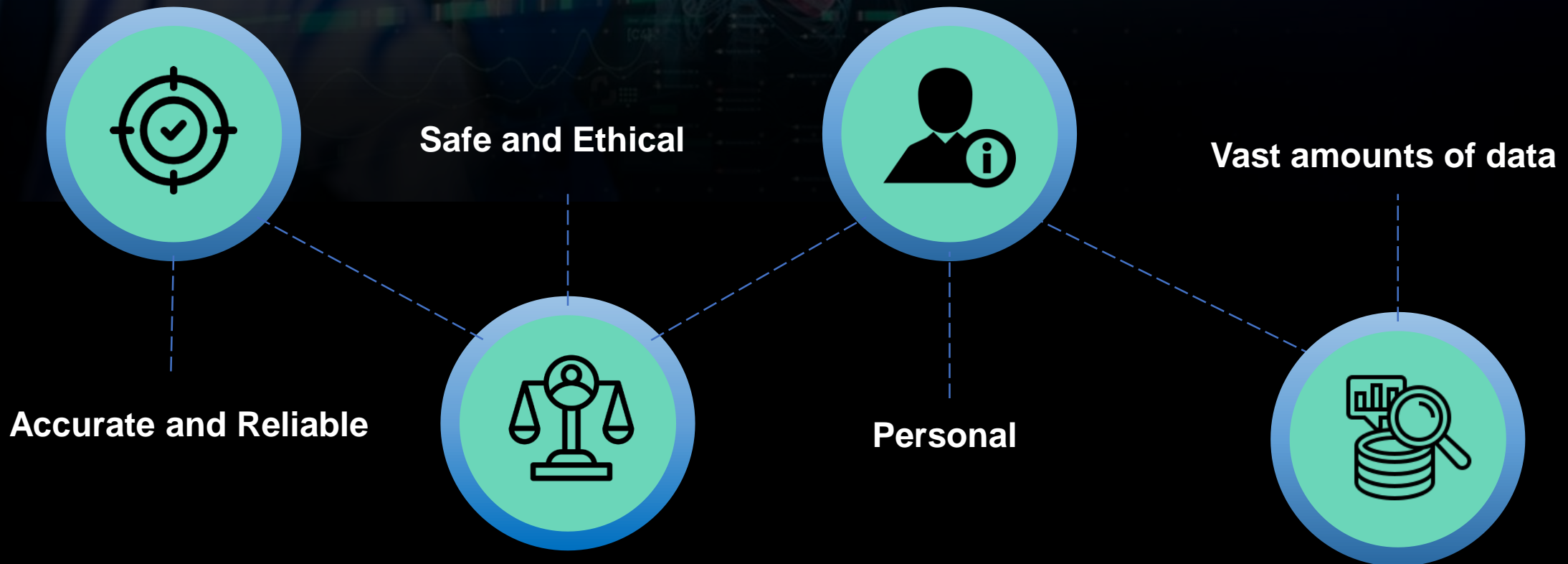
NerveTrack™



HeartAssist™

Remarks

AI in Healthcare has potential
But faces challenges such as accuracy, safety, ethics, and collaboration



Thank you

Inchul Hwang