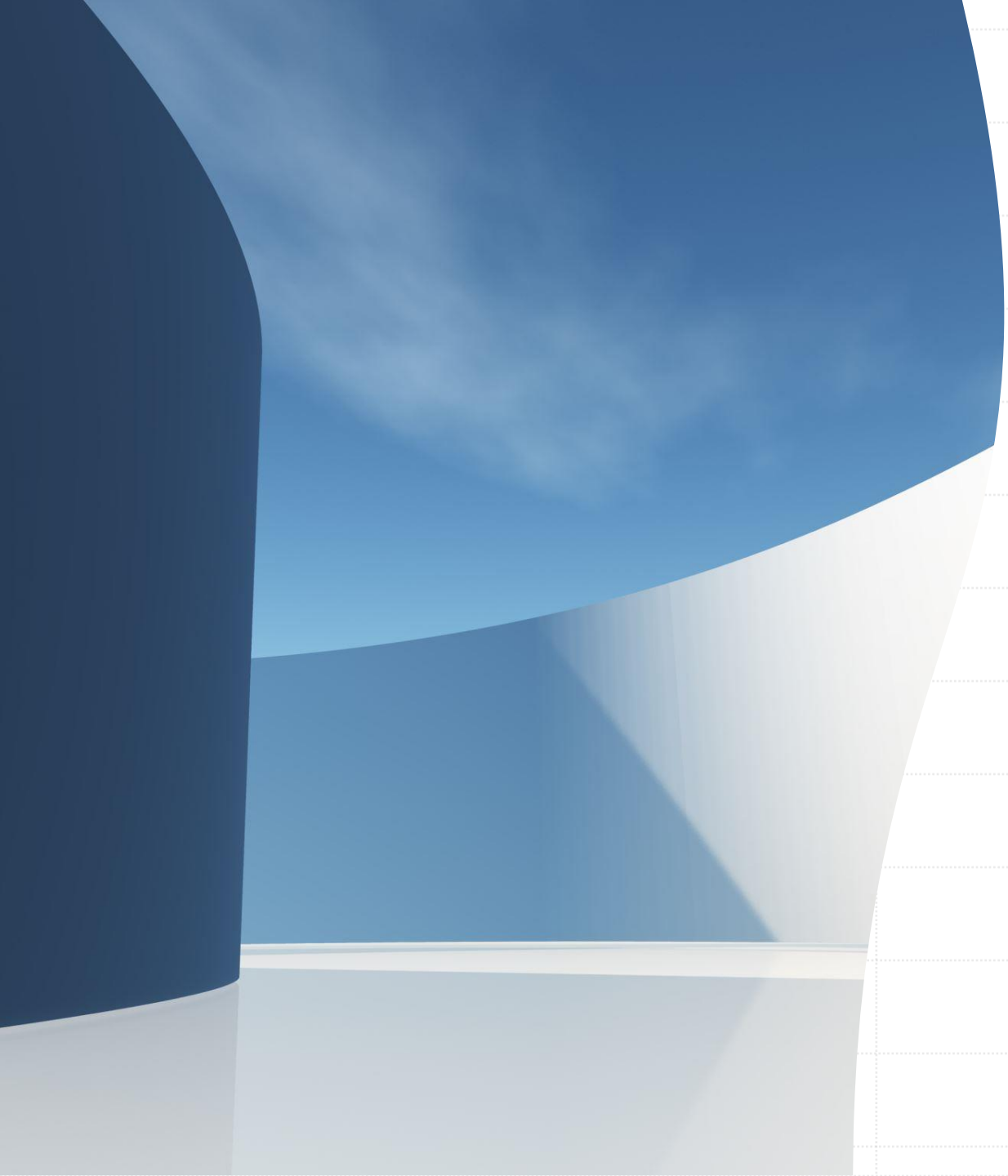


The Age of Coexistence with AI.Robots

: What Kind of Talent Do We Need?

KIST
AI.Robot Institute

김익재

Generative AI: A New Horizon

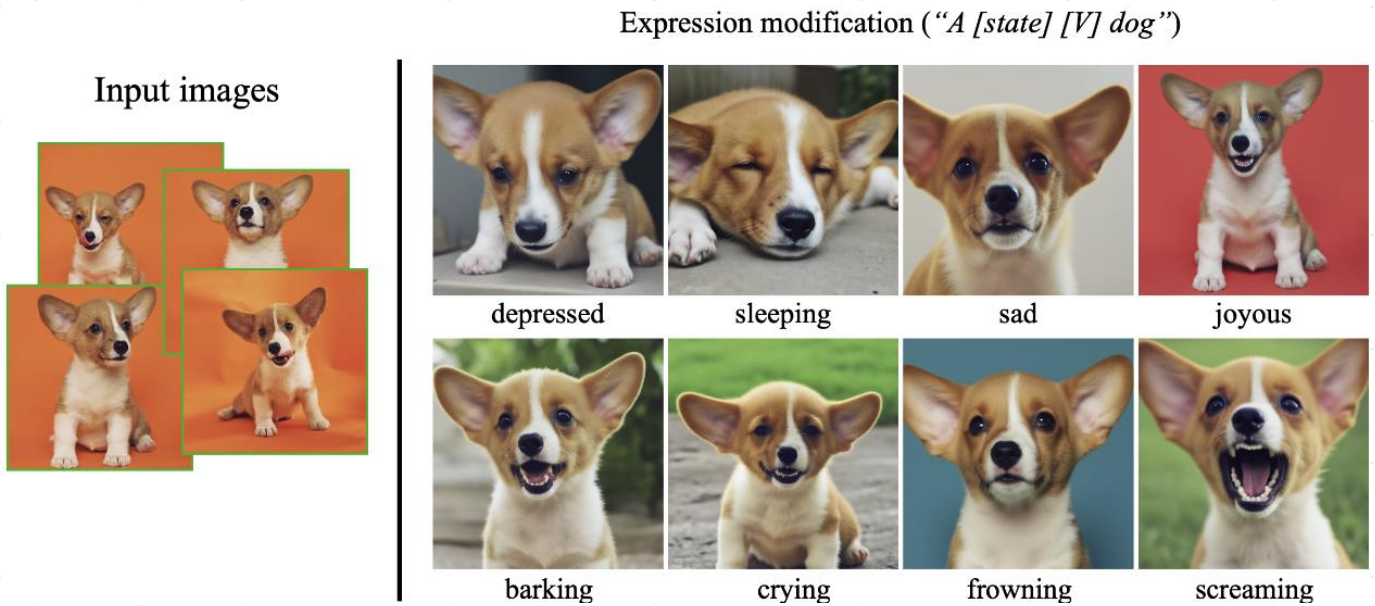
'실제 사람의 얼굴일 것'으로 가장 많은 선택을 받은 Top5

'AI가 생성한 얼굴일 것'으로 가장 많은 선택을 받은 Top5

https://m.dongascience.com/news.php?idx=63520

생성형 인공지능(AI)의 발전으로 이제 AI로 만든 얼굴은 진짜 인간의 얼굴과 구분하기 힘들 정도로 비슷해졌다. 지난해 11월 13일 에이미 다웰 호주 국립대 의대 심리학과 교수팀은 국제학술지 '심리과학'에 AI로 만들어진 얼굴이 진짜 얼굴보다 더 현실적으로 인식된다는 연구 결과를 발표했다.

Generative AI: A New Horizon

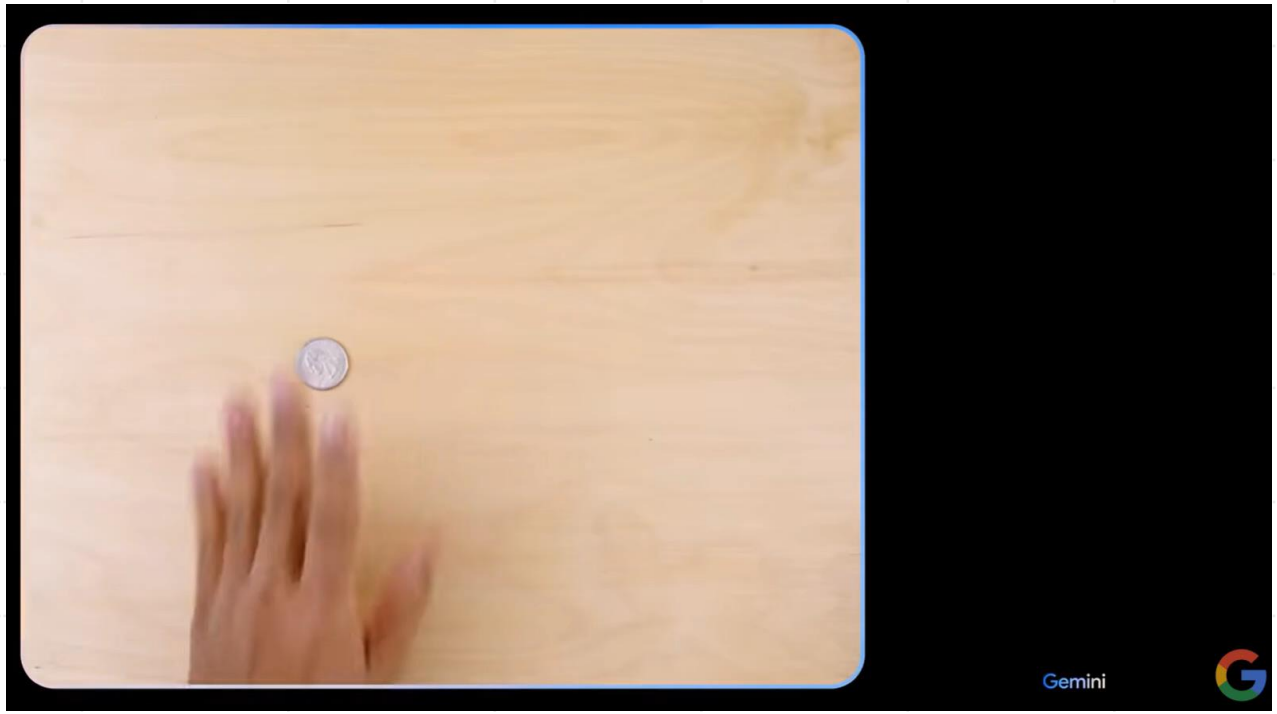


Google's Dream Booth

A litter of golden retriever puppies playing in the snow. their heads pop out of the snow

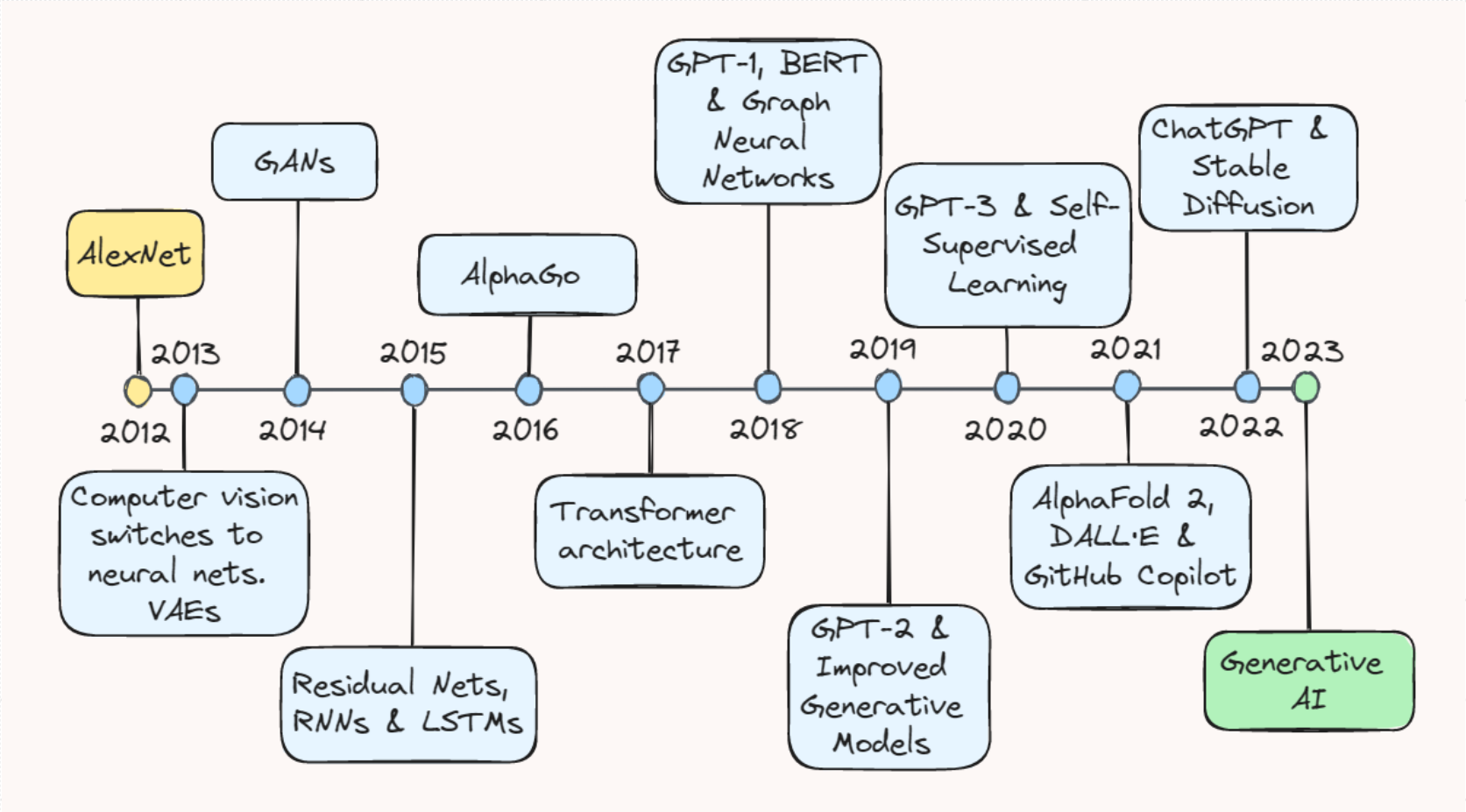
OpenAI's SORA

Generative AI: A New Horizon



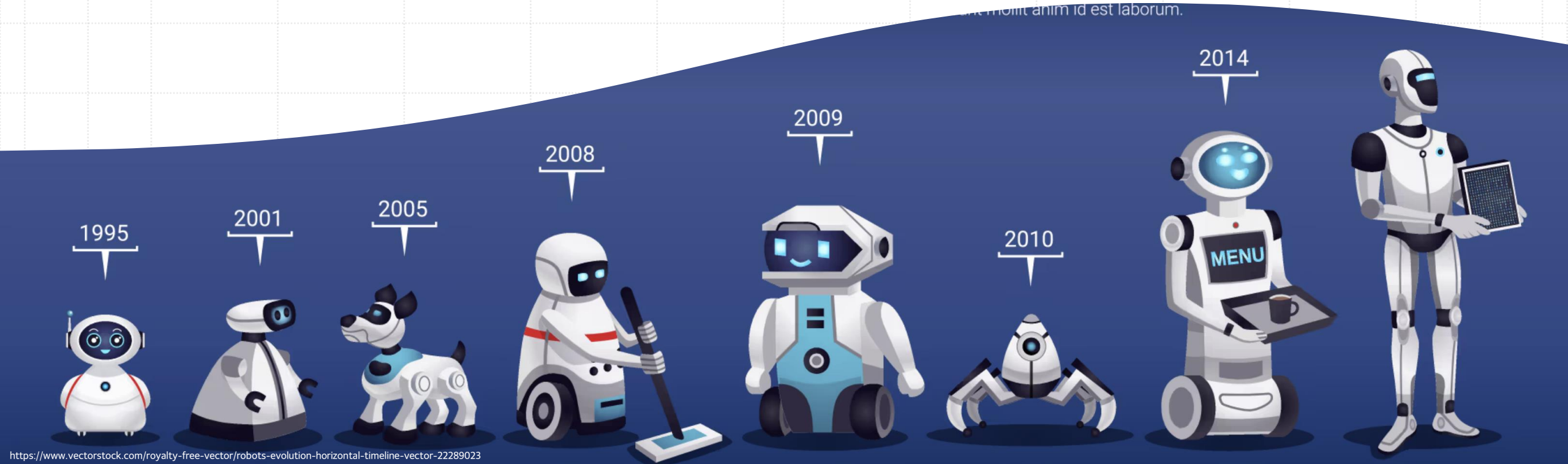
Google's Gemini

Generative AI: Timeline



Ten Years of AI in Review
From image classification to chatbot therapy
Thomas A Dorfer

AI.Robot: The New Era



https://www.vectorstock.com/royalty-free-vector/robots-evolution-horizontal-timeline-vector-22289023

HUMANOID ROBOTS 2024 ////

HD Atlas	NEO	GR-1	Figure	Phoenix	Apollo	Digit	Atlas	H1	Optimus Gen 2
ton Dynamics	1x	Fourier	01	Sanctuary AI	Apptronik	Agility	Boston Dynamics	Unitree	Tesla
50cm / 4'11"	160cm / 4'11"	165cm / 5'5"	167cm / 5'6"	170cm / 5'6"	172cm / 5'8"	175cm / 5'9"	175cm / 5'9"	180cm / 5'11"	180cm / 5'11"
Retired									
3lb | 47kg	121lb | 30kg	121lb | 55kg	132lb | 60kg	154lb | 70kg	159lb | 72kg	146lb | 64kg	180lb | 80kg	103lb | 47kg	103lb | 47kg
mph | 8km/h	7.4mph | 12kmh	5mph | 8kmh	5mph | 4.3kmh	3mph | 5kmh	7.4mph | 12kmh	5mph | 5.4kmh	11mph | 18kmh	5mph | 8kmh	180lb 8mph

Humanoid robot revolution begins…

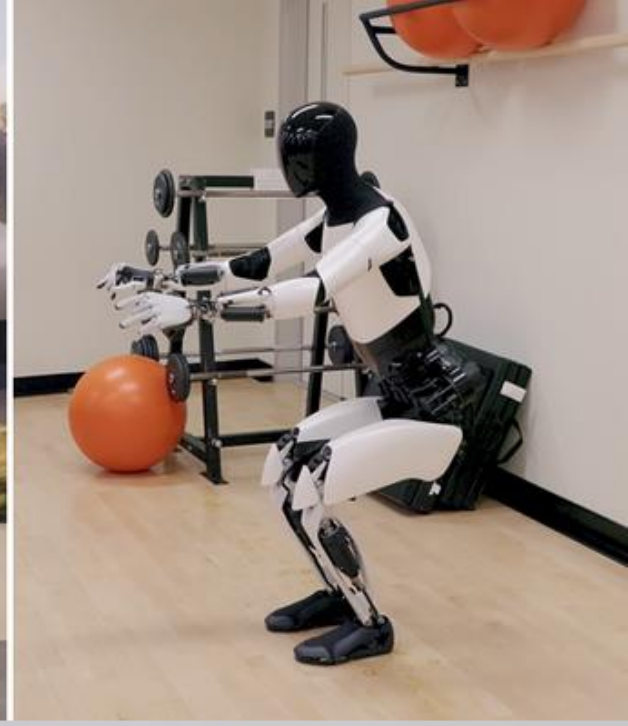
https://www.reddit.com/r/singularity/comments/1c947rf/current_generation_humanoid_robots_fixed_and/#lightbox

TS 2024 ////

Phoenix	Apollo	Digit	Atlas	H1	Optimus Gen 2
Sanctuary AI	Apptronik	Agility	Boston Dynamics	Unitree	Tesla
170cm / 5'6"	172cm / 5'8"	175cm / 5'9"	175cm / 5'9"	180cm / 5'11"	180cm / 5'11"
154lb | 70kg	159lb | 72kg	146lb | 64kg	180lb | 80kg	103lb | 47kg	103lb | 47kg
3mph | 5kmh	7.4mph | 12kmh	5mph | 5.4kmh		11mph | 18kmh	5mph | 8kmh

Humanoid robot revolution begins…

Convergence of Generative AI and Robotics



- **“Beyond Simple Repetitive Tasks: Anticipating the Rise of Robots with Advanced Abilities like Problem-Solving and Social Interaction”**

- This will enable robots to provide human-like interaction across a variety of domains, including manufacturing, logistics, healthcare, education, and customer service, as well as in home environments, such as household assistance and care services.

Convergence of Generative AI and Robotics

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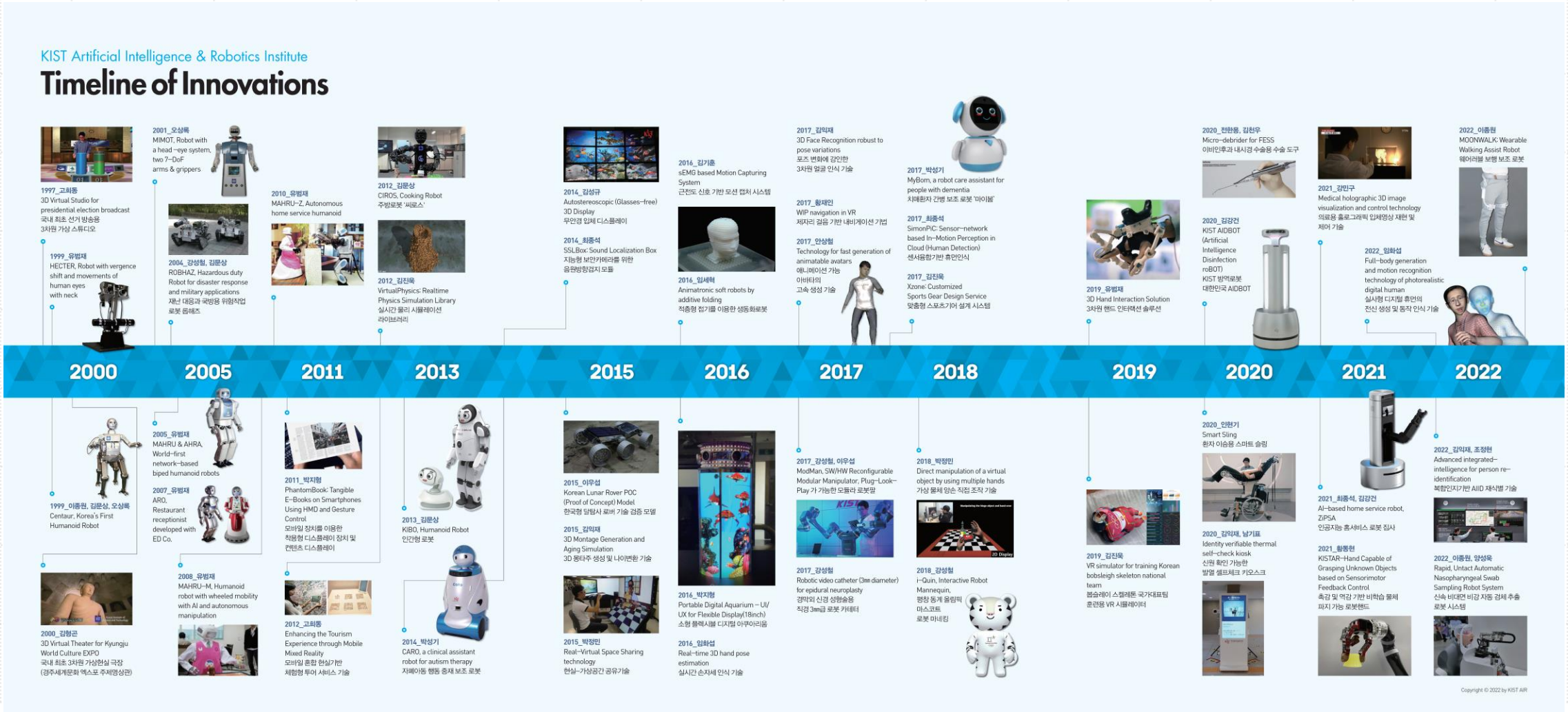

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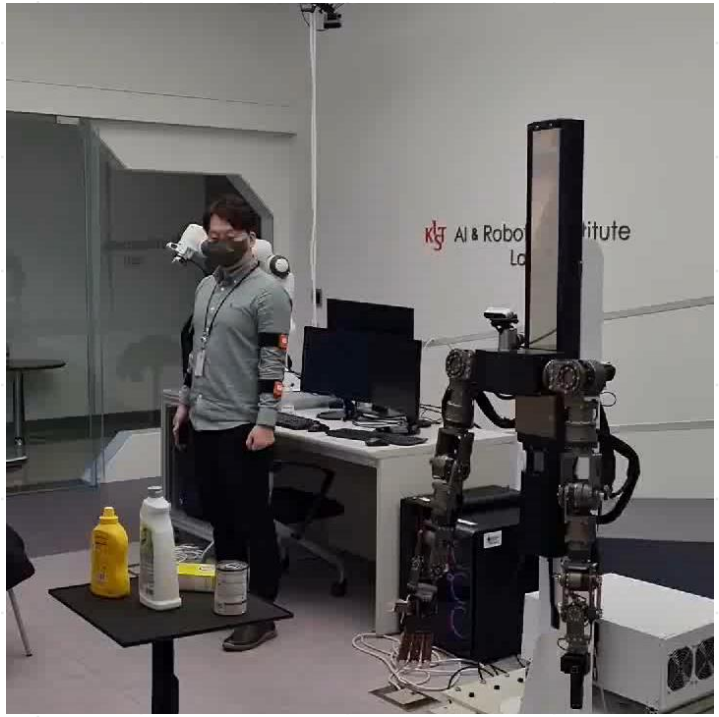

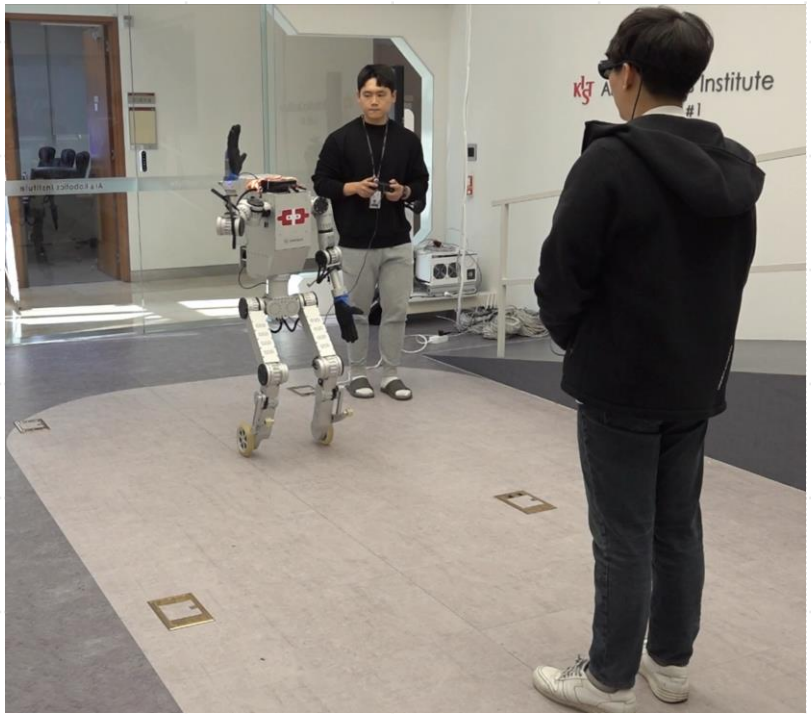

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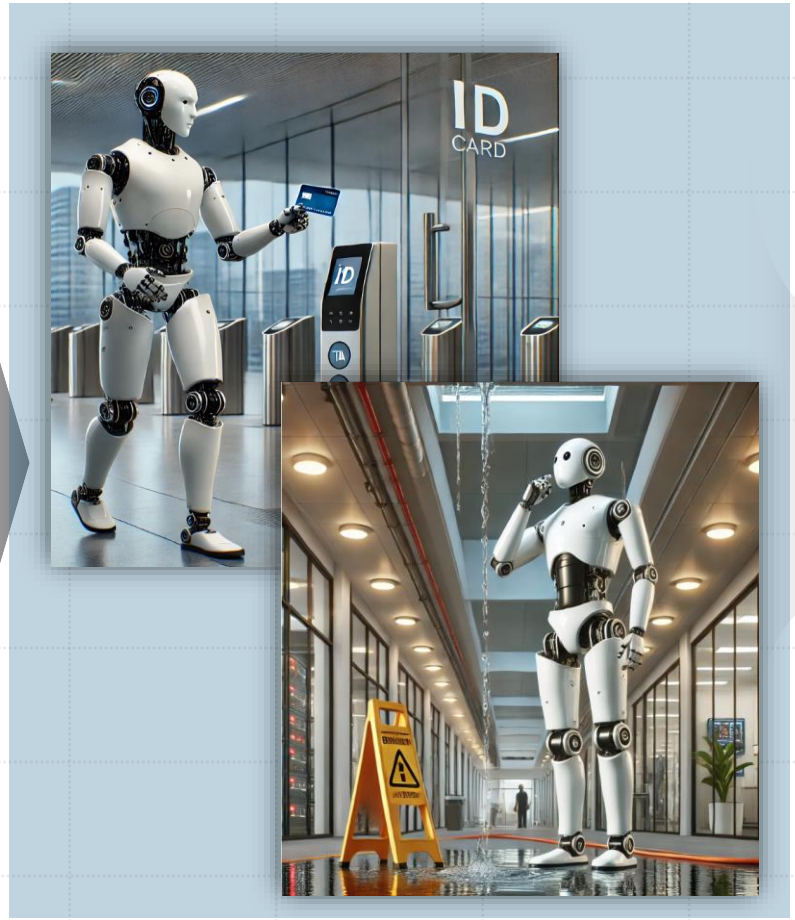
Development of Next-Generation Humanoid 4.0



Phase 1: KIST Autonomous Humanoid Patrol Mission

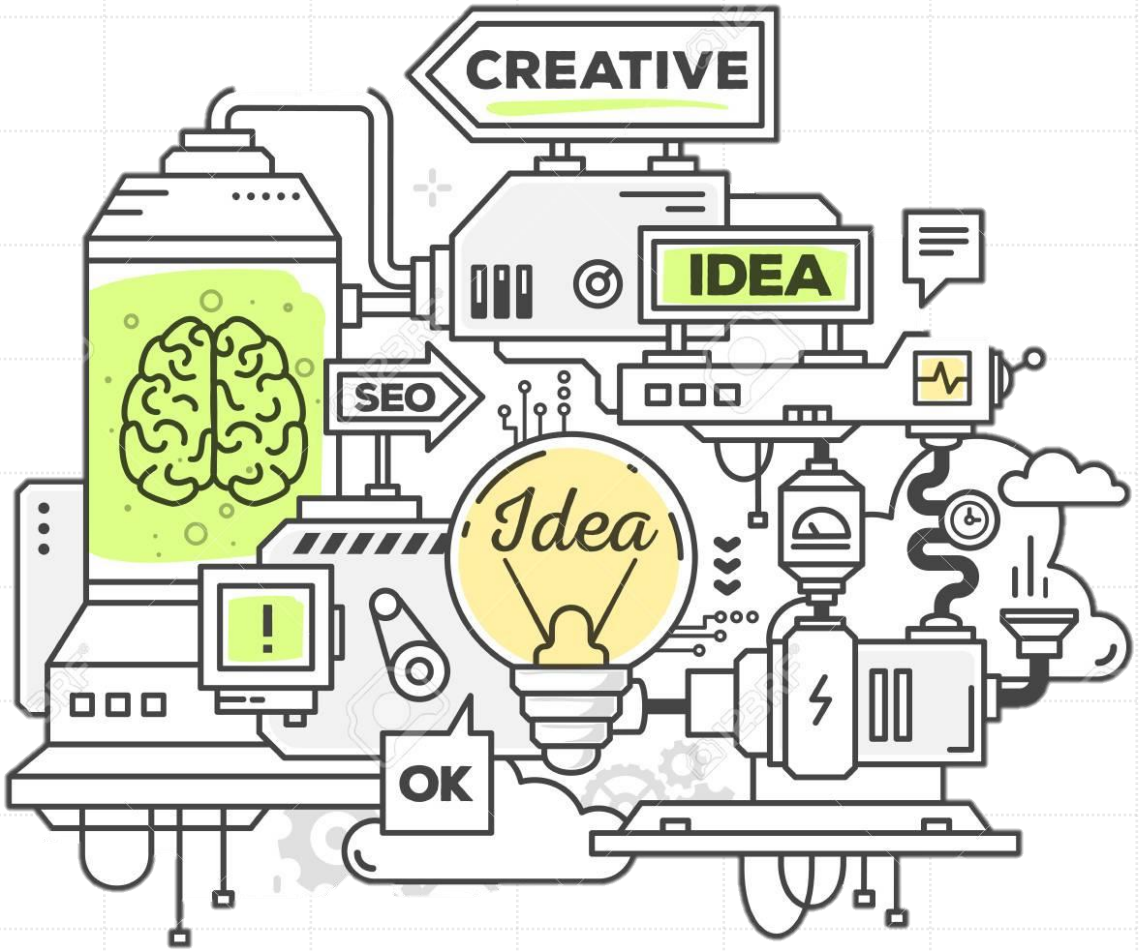
Phase 2: Detection and Response Mission for Explosive Devices in Populated Environments

Is this Enough?

How about this?

But the reality is…

So, what kind of talent do we need?



Let’s tackle problems without definite answers

- **4C**
  - **Creative Thinking**: The ability to overcome stereotypes and come up with innovative ideas.
  - **Critical Thinking**: The ability to analyze and evaluate given information and solutions from multiple perspectives.
  - **Complex Problem-Solving Ability**: The ability to break down a problem into smaller steps and approach it structurally.
  - **Collaboration Ability**: The ability to communicate and coordinate with people from diverse backgrounds to achieve goals together.

Strengthening Critical Thinking Skills

- The ability to verify information provided by AI instead of accepting it uncritically.
- The ability to analyze problems from multiple perspectives and derive creative solutions.
- A spirit of inquiry that continuously asks “why?”

Digital Literacy Education

- Understanding the basic principles of how AI tools work.
- Recognizing the strengths, weaknesses, and limitations of AI.
- Learning how to use digital tools ethically and effectively.

Developing Unique Human Abilities

- Empathy and emotional intelligence.
- Creativity and artistic sensibility.
- Collaboration skills and communication abilities.
- Ethical judgment.

Strengthening Basic Academic Disciplines

- Mathematical thinking skills.
- Language proficiency (native language and foreign languages).
- Scientific thinking approach.
- Humanities literacy.

Concrete Action Plans to Cultivate These Skills:

1. Project-Based Learning

- Utilizing AI tools in the process of solving real-world problems.
- Gaining collaboration experience through teamwork.
- Improving communication skills through presenting the outcomes.

2. Strengthening STEAM Education

- Integrative learning of Science, Technology, Engineering, Arts, and Math.
- Focusing on education that addresses real-life problems.
- Developing creative thinking skills.

3. Discussion and Presentation-Centered Classes

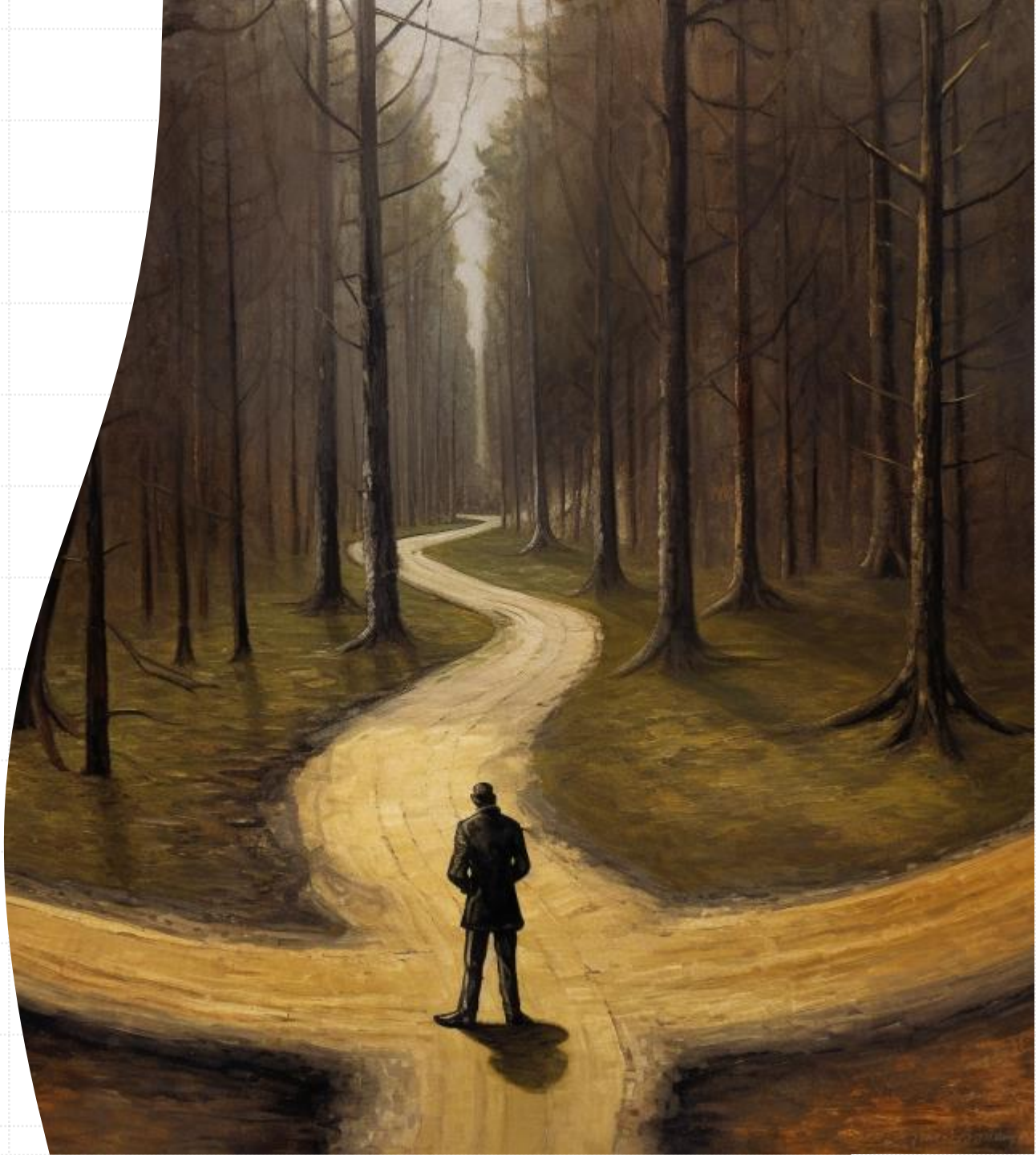
- Enhancing the ability to analyze from various perspectives.
- Developing logical thinking skills.
- Strengthening communication skills.

Take home message

*The important thing is not to fear or reject **AI** but to use it **as a tool** while also developing **unique human values and abilities**.*

***AI** is ultimately a tool created by humans, and how we use it is up to us. Therefore, a balanced education that allows students to grow alongside AI is necessary.*

The Road Not Taken



Thank you

- **drjay@kist.re.kr**