CES 2024 Preview

All Together, All On
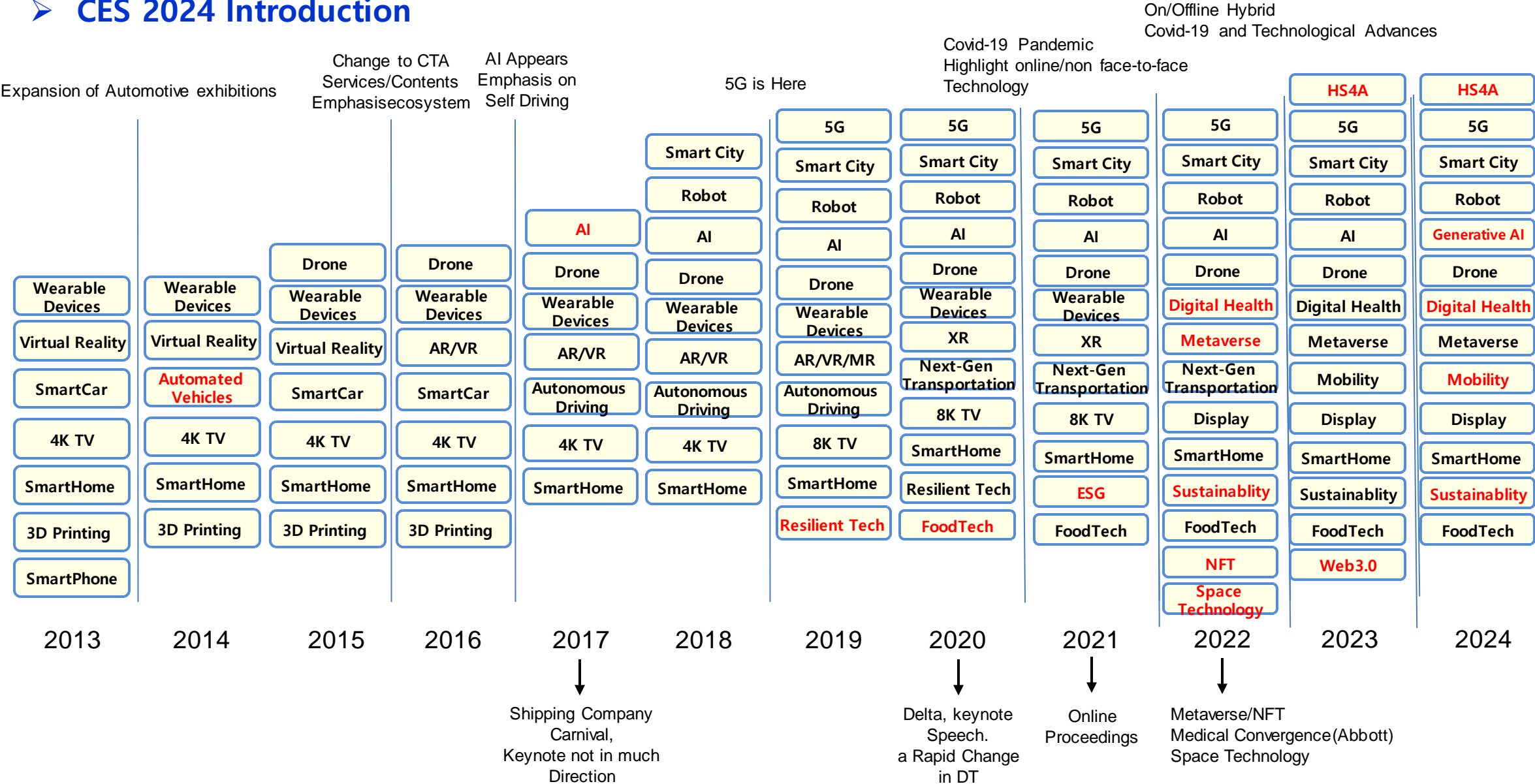
2023. 12. 28

Gu-Min Jeong
Kookmin University, Korea

Introduction to CES 2024

➤ CES 2024 Introduction

Annotations:
- Expansion of Automotive exhibitions
- Change to CTA Services/Contents Emphasisecosystem
- AI Appears Emphasis on Self Driving
- 5G is Here
- Covid-19 Pandemic Highlight online/non face-to-face Technology
- On/Offline Hybrid Covid-19 and Technological Advances

2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
										HS4A	HS4A
						5G	5G	5G	5G	5G	5G
					Smart City	Smart City	Smart City	Smart City	Smart City	Smart City	Smart City
					Robot	Robot	Robot	Robot	Robot	Robot	Robot
				AI	AI	AI	AI	AI	AI	AI	Generative AI
		Drone	Drone	Drone	Drone	Drone	Drone	Drone	Drone	Drone	Drone
Wearable Devices	Wearable Devices	Wearable Devices	Wearable Devices	Wearable Devices	Wearable Devices	Wearable Devices	Wearable Devices	Wearable Devices	Digital Health	Digital Health	Digital Health
Virtual Reality	Virtual Reality	Virtual Reality	AR/VR	AR/VR	AR/VR	AR/VR/MR	XR	XR	Metaverse	Metaverse	Metaverse
SmartCar	Automated Vehicles	SmartCar	SmartCar	Autonomous Driving	Autonomous Driving	Autonomous Driving	Next-Gen Transportation	Next-Gen Transportation	Next-Gen Transportation	Mobility	Mobility
4K TV	4K TV	4K TV	4K TV	4K TV	4K TV	8K TV	8K TV	8K TV	Display	Display	Display
SmartHome	SmartHome	SmartHome	SmartHome	SmartHome	SmartHome	SmartHome	SmartHome	SmartHome	SmartHome	SmartHome	SmartHome
3D Printing	3D Printing	3D Printing	3D Printing			Resilient Tech	Resilient Tech	ESG	Sustainablity	Sustainablity	Sustainablity
SmartPhone							FoodTech	FoodTech	FoodTech	FoodTech	FoodTech
									NFT	Web3.0	
									Space Technology		

Bottom notes:
- 2017: Shipping Company Carnival, Keynote not in much Direction
- 2020: Delta, keynote Speech. a Rapid Change in DT
- 2021: Online Proceedings
- 2022: Metaverse/NFT Medical Convergence(Abbott) Space Technology

Introduction to CES 2024

➢ CES 2024

▪ What is CES?
- The world's largest new technology exhibition
- Organized by CTA(Consumer Technology Association)

▪ Event date
- US time
  - ✓ Media Day : January 7th - January 8th
  - ✓ the main exhibition: January 9, 2024 - January 12, 2024 4:00 PM
- Korean time
  - ✓ Media Day : January 8th - January 9th
  - ✓ the main exhibition : January 10, 2024 3:00 AM ~ January 13, 2024 9:00 PM

▪ Location
- Las Vegas, United States

284
FORTUNE GLOBAL 500
companies have registered.

85
INTERBRAND 100
companies have registered.

38
of the top retailers have registered.

60%
of registered attendees are senior-level.*
*President/Owner, C-level, VP, Director/Sr. Manager/General Manager

150+
countries represented.

41
different technology categories covered.

29
meetings on average
are conducted on-site.

< CES 2024 participation scale >
As of November 28, 2023

Introduction to CES 2024

- **CES 2024 exhibition (as of December 07, 2024)**
  - **More than 3500 total exhibitors expected**
    - More than 1000 start-ups
    - 3,000 applications submitted for CES2024 Innovation Awards
      - ✓522 applications won innovation awards
  - **Participant**
    - More than 130,000 expected to participate
      - ✓CES 2023 11.5K people
      - ✓CES 2022 4.5K people
    - 1/3 participate outside the United States
  - **More than 3,000 companies register to participate in media**
  - **Various industries such as mobility, healthcare, and Generative AI**
  - **500 Korean companies confirmed to participate**

➢ **CES 2024 Preview (2023. 12. 07)**

- **Convergence of various industries centered on AI**
  - Convergence of various industries such as mobility, infrastructure, agriculture, and beauty
- **Expanding participation of Korean companies**
  - More than 500 companies participating
- **Keynote speech**
  - HD Hyundai, SIEMENS, L'Oréal, Walmart, Nasdaq, etc
- **Participation in global companies leading innovation**
  - Google, Hyundai Motors, Amazon, Samsung, LG, Benz, AMAZON, etc.
- **Enlargement of scale**
  - a size of more than 2.4 million square feet
  - 12 official exhibition halls
- **Eureka park**
  - Participate in about 1,000 start-ups
- **Conference**
  - 250+ conference sessions

FEATURED EXHIBITORS

See the companies from across the globe that will be showcasing the latest in digital health, food tech, automotive tech, NFTs, gaming, smart home and more.
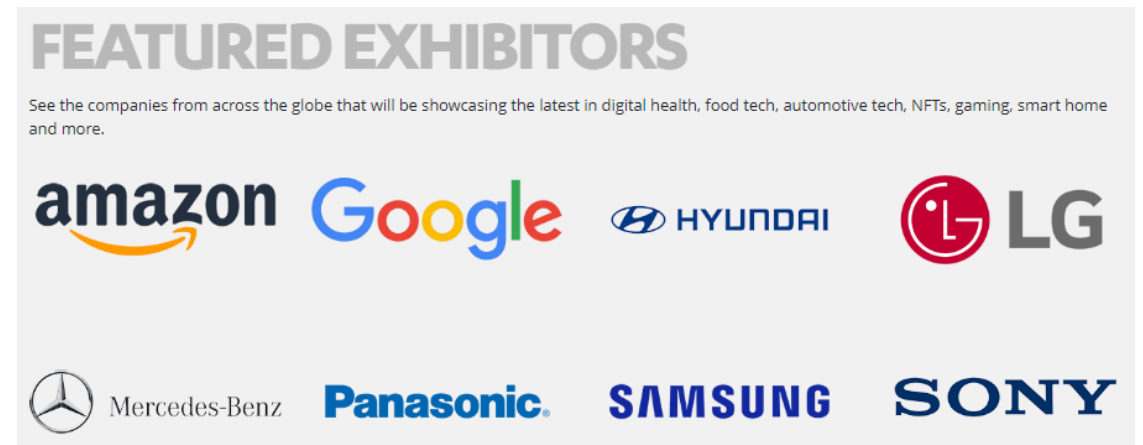
CES 2024 Key Participants

Introduction to CES 2024

➢ **Media Preview (2023. 12. 07)**

- **Digital Health**

- **Generative AI**

- **Sustainability**

- **Gaming**

- **Vehicle Tech**

- **Cybersecurity**

- **Future of Money**

- **Space Tech**
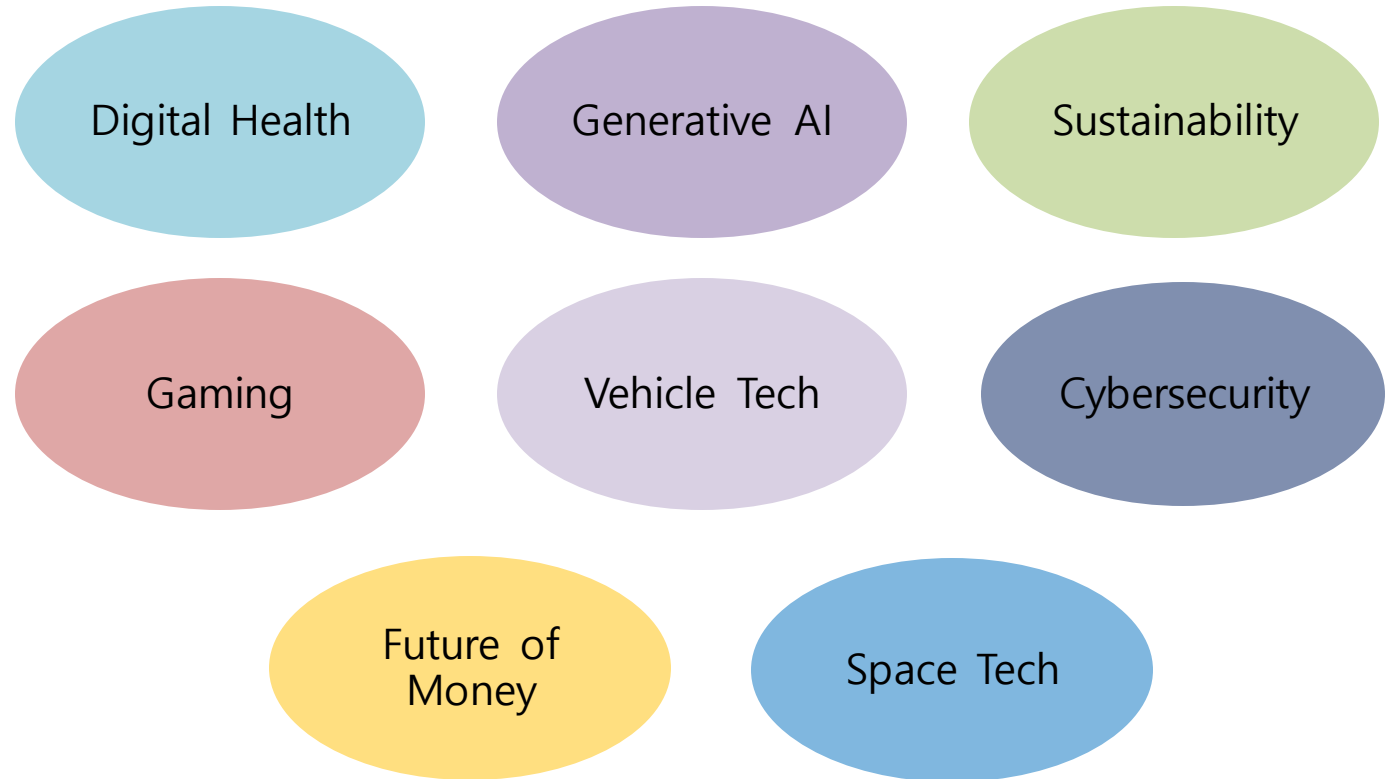
Main trends in CES 2024

➤ **Key points of view**

- **The largest exhibition of all the time**
  - US, with major US players including Google, Intel, amazon, etc.
  - Korea, More than 500 companies including Hyundai Motors, Samsung Electronics, and LG Electronics participate.
  - Expected to record the highest number of visitors ever
- **The era of generative AI**
  - exhibition of various Generative AI technologies
  - Generative AI that melts into products and services
- **Mobility leads industrial development**
  - Exhibition of various mobility and services
- **HS4A through technological advancements**
  - Human Security through technological advancement
- **Sustainability**
  - Recycling and new materials for environmental protection and carbon neutrality
- **Digital health**
  - Personalization and universalization of medical services through technological innovation
- **Smart home**
  - Smart home that emphasizes connectivity

Main trends in CES 2024

➢ **Major companies in CES 2024**

> **CES 2024 Keywords**
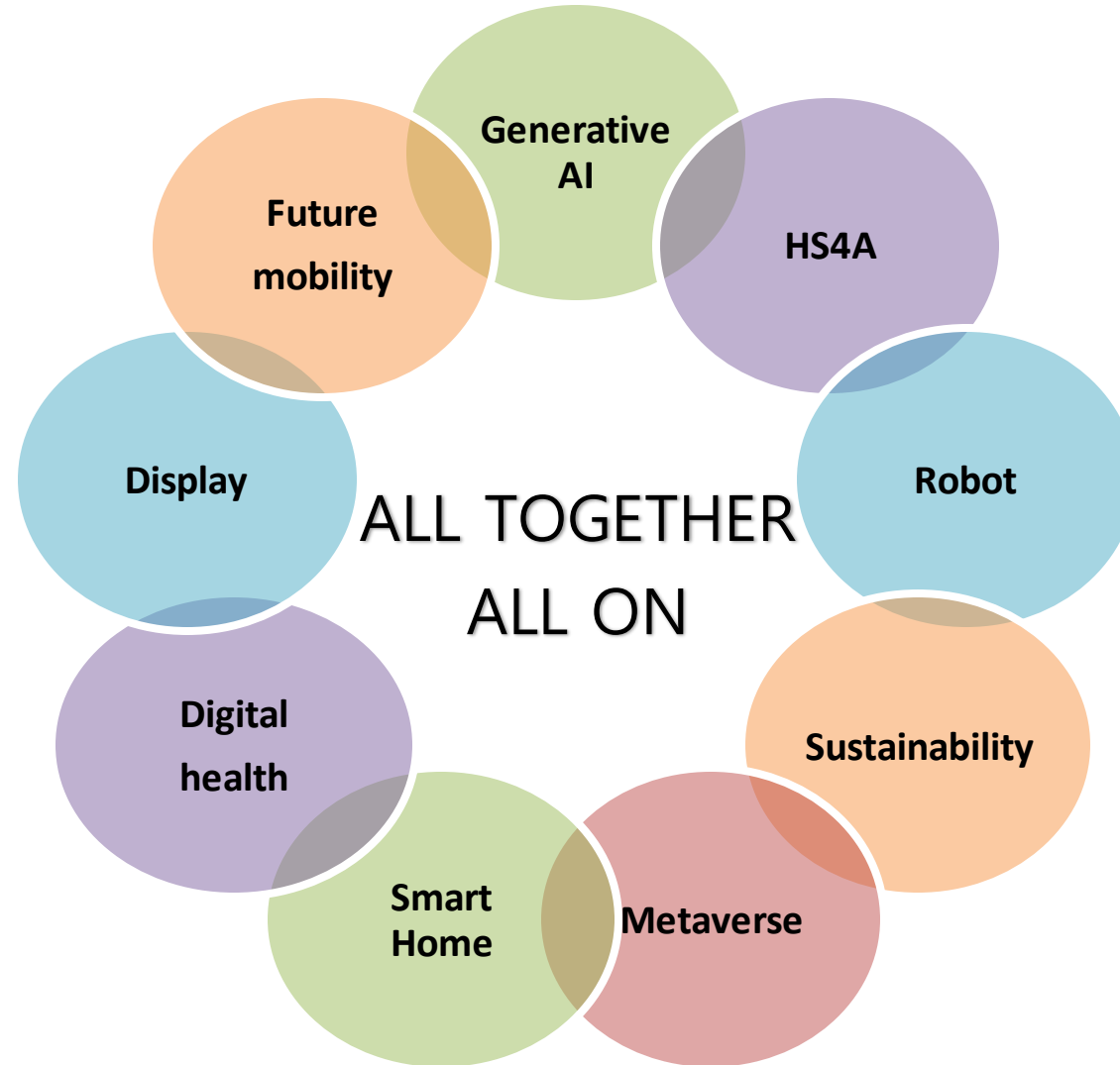
➢ **Innovation by Artificial Intelligence and Generative AI**

- **Generative AI Innovates the Market**
  - Convergence with a variety of services
- **AI Everywhere**
  - Smart home appliances
  - An autonomous vehicle
  - Digital Health/Medical Applications
  - Application Services
- **Smart appliances**
  - Enhance AI-powered capabilities
- **Digital Health and Medical Applications**
  - Diagnosis and Treatment
- **Media Devices**
  - 3D video, audio
- **Various application services**
  - Gerontech, Pets, Shopping & Finance, etc
- **Security device**
  - Gun detection, CCTV, etc
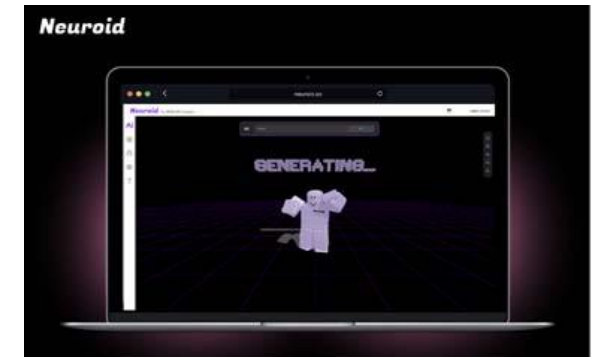
<Mirart AI Mirror, Mirrorroid>

<NeuroidR™, NationA INC>

<AiD, Cream.>

<Beat based AI Music Video Generator, Verses >

➤ **2024 Generative AI Market**

▪ **Google**
  • Gemini, Bard
  • Gemini Ultra Bard
    ✓Fusing Gemini and Bard, coming in 2024

▪ **Microsoft**
  • Work with OpenAI to build a diverse software ecosystem

▪ **Facebook**
  • Large-scale language model LLaMA released
  • "MetaAI," a self-generated AI, is unveiled

▪ **Amazon**
  • Support for deploying generative AI on AWS servers

▪ **Naver**
  • Ultra-Large AI Model, HyperClova X Development

▪ **Upstage**
  • Large Language Model, Solar
    ✓Rank 1st, Hugging face Open LLM Leaderboard, 2023/12
    ✓Inference, Common Sense, Hallucination Prevention
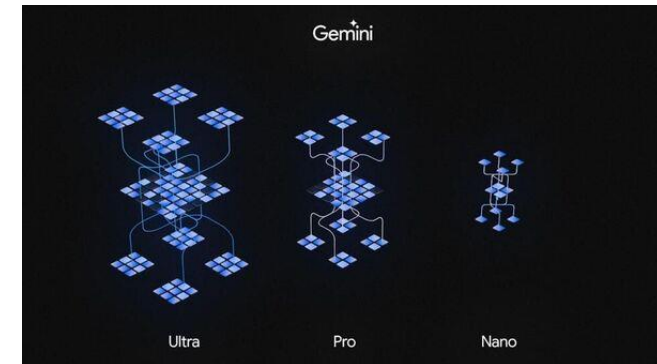
CES 2024 Keywords – Innovation by Artificial Intelligence and Generative AI

➤ CES 2024 Generative AI Innovation Awards

<Seller Canvas, STUDIO LAB, KR>

- Supporting businesses, sellers, and agencies that need commercial content
- Create marketing content with generative AI

<Mirart AI Mirror, Mirrorroid>

- Use Generative AI to predict future styling of users
- Prediction of user appearance after hairstyle, makeup

<TooToon, Onoma AI>

- Cartoon creation tool using generative AI
- Develop a story using a consistent character
- Create a simple picture or text

<Beat based AI Music Video Generator, Verses>
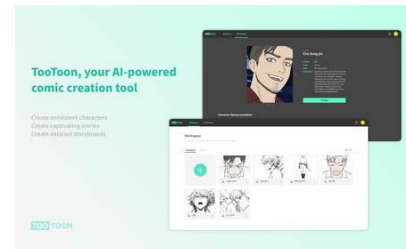
- Touch the screen to the beat, it automatically creates a music video
- Create music videos with preset avatars
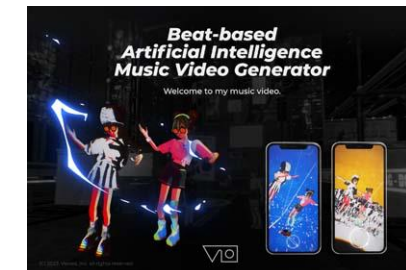
Source: CES 2024

CES 2024 Keywords – Innovation by Artificial Intelligence and Generative AI

➤ CES 2024 Generative AI Innovation Awards

<NeuroidR™, NationA INC., KR>

- Generative AI for games, metaverse characters
- Create 3D/4D characters and motion with text, voice, and video input.

<Twinit, EntreReality Co Ltd., KR>
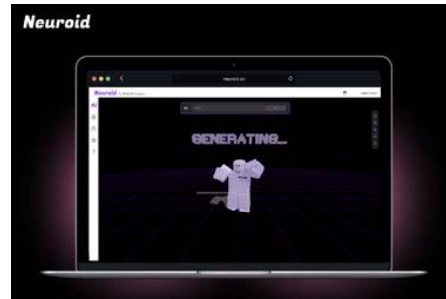
- 3D digital human creation technology
- Through Generative AI, create an avatar of a person taken

<Glinda AIMI, Visualsyn, KR>

- Metaverse content creation software
- Create metaverse content with WebGL and Generative AI

<AiD, Cream, KR>

- Generative AI-based drawing assistance service
- Line drawing and coloring functions
- Simplifies tasks with Web Interface
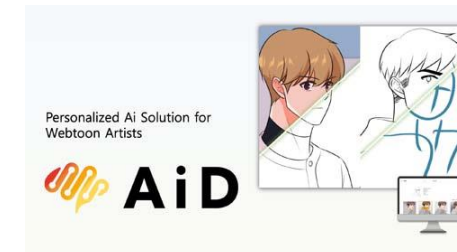
CES 2024 Keywords – Innovation by Artificial Intelligence and Generative AI

> ## CES 2024 AI Innovation Award

<Gun Detection System, Bosch>

- First Gun Detection System using AI, Video, and Audio
- Send a notification even if it's deemed dangerous without a gun

<Vision Plus, DEEPVISIONS Co., KR>

- AI-based image recognition Particle Matter monitoring solution
- Detection and evaluation of pollutants through CCTV

<Focus AI, Focus AI>
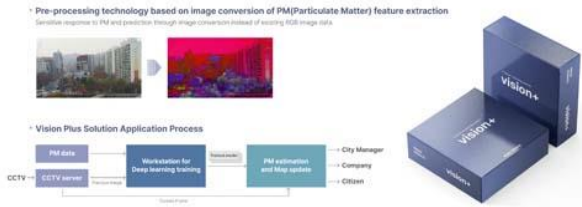
- Provide investment guide by analyzing companies using AI
- By extracting patterns from patent data, companies can strategically invest in the right new technologies

<Mac'AI, SynergyAI>
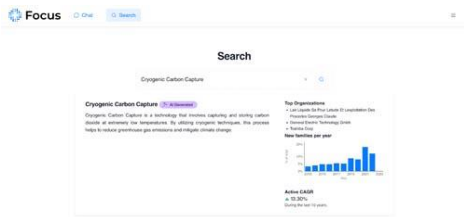
- AI solutions for predicting and diagnosing heart disease
- Early detection of arrhythmia risk up to 14 days in advance
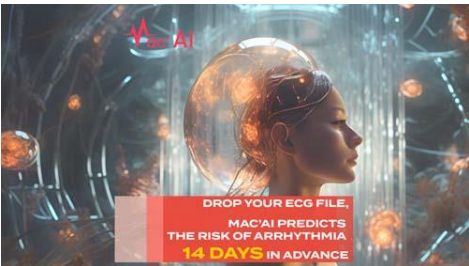
CES 2024 Keywords – Vehicle Technology

➤ **CES 2024 Mobility Participating Companies**

- **Automotive Companies**
  - Hyundai, Kia, Mercedes-Benz, VINFAST, Togg
- **Heavy Equipment Companies**
  - Caterpillar
    - ✓ Manufacturing of construction/mining equipment, dump trucks, excavators, etc.
  - John Deere
    - ✓ Heavy equipment and farm machinery manufacturers
- **Autonomous Driving Companies**
  - Mobileye
  - Luminar
- **Marine Solution Development Companies**
  - BRUNSWICK, Volvo Penta
- **UAM Development Company**
  - Supernal
    - ✓ Subsidiary of Hyundai Motor Company

Vehicle Tech at CES 2024

Meet the Exhibitors

➢ **Key Future Mobility Issues**

▪ **Transitioning to EV-Autonomous Driving-SDV**

• IAA 2023

✓ Benz, BMW, Volkswagen

• Dedicated electric vehicle platform

• MMA, Neue Klasse and PPE

• Autonomous driving

• Unveiling its own software platform

• MB.OS, VW.OS

▪ **Ship**

▪ **Construction Equipment**

▪ **Agricultural Machinery**
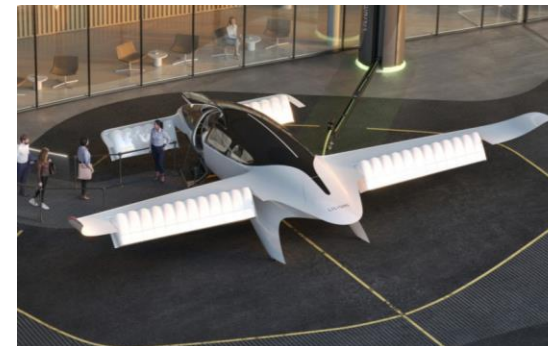
CES 2024 Keywords – Vehicle Technology

➢ Vehicle Technology Key Trends

< Hyundai Motors Group >

- Participating in 7 companies including Hyundai, Kia, Motional, and 42Dot
- SDV Roadmap to be revealed
- UAM, PBV, and robotic vision to be revealed

< Honda >

- 1/9 10:30 New EV Series to be revealed(23.12.06)
- Key Technologies for Carbon Neutrality to Be Introduced

<Magna>

- Active-safety, connectivity technology exhibition
- Will discuss accelerating V2X technology development and implementation

<Continental>

- Cloud and Zonal Architecture Technology Exhibits for SDV
- Self-driving and vehicle display technology exhibition

Source: Each company

CES 2024 Keywords – Vehicle Technology

➢ **Vehicle Technology Innovation Award**

\<LiDAR - SCALA Gen.3, Valeo\>
- High resolution LiDAR sensor for level 4 autonomous driving
- Equipped with high-density point cloud and AI software

\<InnovizCore, Innoviz\>
- LiDAR-based hardware and AI software computing platform
- Provides computer vision, 3D mapping, positioning, etc
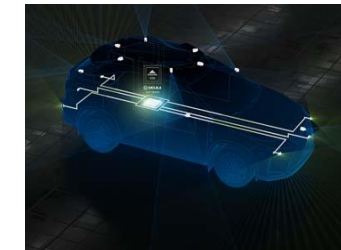- Industry-first support for switching between autonomous and manual driving

\<Radar Vision Parking, Continental\>
- Autonomous parking solutions using radar instead of USS
- Fusing radar and four cameras for better parking
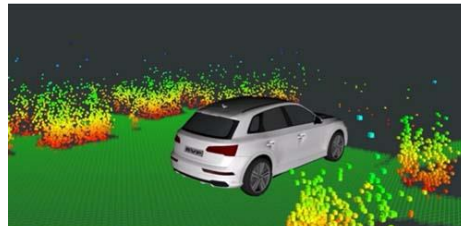
\<Centrally Processed 4D Imaging Radar Architecture, Ambarella\>
- World's first centralized 4D imaging radar architecture
- Combine Ambarella's AI Controller with AI Radar Software

CES 2024 Keywords – Vehicle Technology

➢ **Vehicle Technology Innovation Award**

<EV Charge, Etc at BT Group>

- A public charging network project in the UK
- Provides electric vehicle charging through 60,000 cabinets owned by BT

<EV Battery recycling, POEN, KR>

- A solution for recycling damaged batteries
- Guarantees the same performance and reliability as new batteries at 1/3 of the cost

<Eco DisMantler, THOTH, KR>

- AI-based autonomous robots designed for the disassembly of end-of-life electric vehicle batteries
- Performs tasks such as cover, bolt, and wire removal, as well as battery disassembly automatically

<Anker SOLIX Solarbank E1600, Anker Innovations>
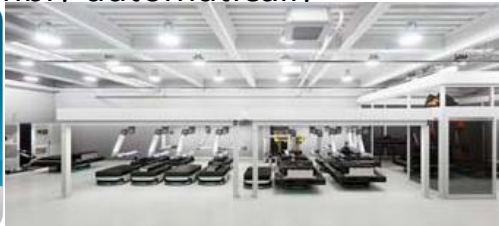
- LFP battery cells that maximize solar energy efficiency
- Can save over $2,900 in electricity bills over 15 years

CES 2024 Keywords – Vehicle Technology

➢ **Vehicle Technology Innovation Award**

<Integrated Dashboard Solution, BHTC and Corning>

- Bendable automotive displays
- Combine Corning's LivingHinge™ with BHTC's Kinetic System
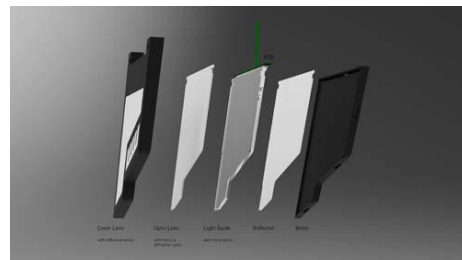

<Interactive Transparent Window, AUO>

- Apply transparent display to side windows and controllers
- Provides entertainment, conference, AR, etc. through display
- Provide vehicle approach alerts from external cameras when opening doors

<FlatLight μMX, FORVIA Hella>

- Ultra-thin, high-performance, multi-color, and multi functional vehicle rear light module
- 80% reduction in energy consumption

<Pontosense In-Cabin Wireless Sensing, Pontosense>

- AI detection solutions to monitor driver and passenger safety
- Wirelessly collect information such as heart rate, breathing
- Real-time diagnostics for drinking, drowsiness, etc.

Source: CES 2024

CES 2024 Keywords – Robot

➢ **Key Trends of robots**

- **Mobile Robot Advancements**
  - Robots Overcoming Obstacles
  - Autonomous delivery robots

- **Service Robot Advancements**
  - Humanoid
  - Food Making Robot
  - Educational Robots
  - Pet robots

- **Industrial Robot**
  - Environmental Management Robots
  - Construction site robots

- **Collaborative robots**
  - Human-robot collaboration
  - Humanoid

CES 2024 Keywords – Robot

> ## Robot Innovation Award

\<RoWok™, SJW Robotics\>

- A fully autonomous restaurant
- Takes orders and cooks without staff
- Can prepare up to 60 meals within 1 hour
- Mobile structure for easy movement

\<Stir-fry cooking robot, TechMagic Inc\>

- Stir-fry cooking robot
- Supports cooking automation, self-cleaning frying pan, etc.
- Connected to the cloud to provide a digital recipe library

\<Rosa, Glüxkind Technologies Inc.\>

- A stroller equipped with AI features
- Automatic braking function in dangerous situations
- White noise for mental and emotional stability

\<A delivery robot that climbs stairs with only wheels, MOBINN, KR\>

- Delivery robot capable of climbing stairs with only wheels
- Overcomes obstacles like stairs using its self-developed wheel system

CES 2024 Keywords – Robot

➢ **Robot Innovation Award**

<Bobcat S7X All-Electric Skid-Steer Loader, Doosan, KR>

- The world's first electric skid-steer loader
- Powered by lithium-ion batteries, emitting no gas
- Hydraulics replaced by electric drive motors and ball screw actuators

<AIR-AMR, GOLE-Robotics, KR>

- Construction robot automating material transport
- Able to autonomously navigate construction sites
- Ensures durability even in harsh environments

<Jackery Solar Mars Bot, jackery>

- Solar-charging robot with autonomous driving and sun-tracking capabilities
- Roams outdoors, collects solar-charged batteries, and uses them at home

<coding education robot , ALUX, KR>

- Coding education robot, VINU
- Built-in application for learning without internet connection
- Wearable device capable of detecting body movements

Source: CES 2024

CES 2024 Keywords – Display

➢ **Display Key Trends**

- **TV Market Recession Continues**
  - 1H23 global TV unit sales up 0.1% year-over-year, revenue down 4.3%

- **Automotive Display**
  - The growing market for automotive display products
    - ✓Current Industry Leader: LG Display

- **OLED market diversification**
  - Samsung Display QD-OLED panel yields over 90% achieved
  - Developing TVs, Lighting with LG Display WOLED
  - LG, Samsung set to take share of small and medium-sized OLEDs as TV market stagnates

- **Smartphone Display**
  - Samsung delivers over 70% of OLEDs to Apple's iPhone
  - LG to supply 20m units, BOE to supply 6m units to Apple

source: LG, SAMSUNG ELECTRONICS

CES 2024 Keywords – Display

➤ **Display Key Trends**

  ▪ **Samsung Display**

   • Rollable OLED Display
     ✓ Large Rollable Display
   • QD OLED Display
     ✓ Odyssey OLED G9
   • 8K OLED mass production succeeds, but demand is low

  ▪ **LG Display**

   • Wireless OLED TV
     ✓ wirelessly transmit 4k 120Hz video and audio
   • Bendable Display
     ✓ OLED panels for 17-inch foldable laptops start mass production
   • Unveiling 'UP Appliances 2.0'
     ✓ Moving from home appliances to smart home solutions
     ✓ Challenge to transition to HaaS (Home as a Service) in the home appliance industry

\<Samsung rollable Flex\>

\<LG Wireless OLED TV\>

CES 2024 Keywords – Display

➢ Display Innovation Award

<InCabin XR BOX, MOTREX, KR>

- XR platform for electric vehicles and Level 3/Level 4 Autonomous driving users
- Integrated with CAN network to offer entertainment functions

<Rollable Rear Seat Entertainment(RSE), AUO>

- Provides a rollable display for the rear seats of the vehicle
- Can be minimized as needed to minimize space occupation

<eMirror Safe UX, FORVIA>

- Enhanced visibility of side mirrors and rearview mirrors based on eMirror technology
- Application of patented software technologies such as transparent view and image processing
- Wireless updates without the need for additional sensors

<Vehicle Using Laser Projection Display, Hisense Visual Technology>

- Displays vehicle and road information on the front windshield
- Displays images and logos inside the vehicle

CES 2024 Keywords – Display

➢ Display Innovation Award

<Skyline Immersive Display, FORVIA>

- Display located at the intersection of the front windshield and the instrument panel
- Reduces the change of the driver's field of view to the display while driving

<Vehicle Using Laser Projection Display, Hisense Visual Technology Co.>

- Simulates the vehicle environment using laser projection
- Converts the front windshield into an information hub, displaying vehicle data and road information
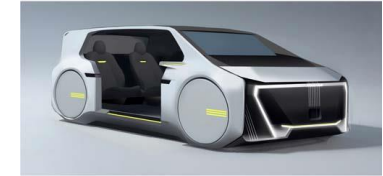
<0.13'' Micro LED Display Module, Sitan Semiconductor International Co>

- 0.13-inch 1024x768 Micro LED display
- Ultra-high pixel density (10,000ppi)

<Visteon Deco Trim, Visteon Corporation>

- Command and control display for vehicles
- Powered and operated when motion is detected through sensors

CES 2024 Keywords – Smart Home

➢ **Smart Home Key Trends**

- **Connected appliances**
  - Providing services with connection

- **Energy efficiency**
  - Energy harvesting with solar energy

- **Smart control systems**
  - Control with gestures, voice, and more

- **Home appliances with AI**
  - Artificial Intelligence Digital Smart Mattress
 - Dryers with artificial intelligence sensors

mui Board Gen 2

A smart home controller designed for family wellbeing. mui Board Gen 2 seamlessly controls Matter devices — resulting in a calm and environmentally-friendly connected experience at home.

matter

CES 2024 Keywords – Smart Home

➢ **Smart Home Trends**

▪ **SAMSUNG SmartThings**

- Connecting appliances with SmartThings
- Connect and control multiple appliances with one home appliance application
- SmartThings Station
  ✓ Smart home hub and fast charging pad
- Connect via pop-up message on Galaxy smartphones
  ✓ Can be set through SmartThings mobile app such as temperature control, lighting, and power
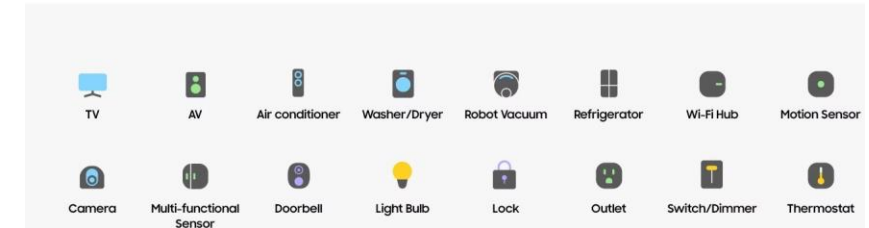
▪ **LG ThinQ**

- LG Electronics' Artificial Intelligence Brand
- Smart home configuration is possible with smartphone app
- Onboarding service
  ✓ Automatically link the delivery status of the purchased product to the ThinQ app
- Image control via Alpha 9 processor, an artificial intelligence image quality/voice engine
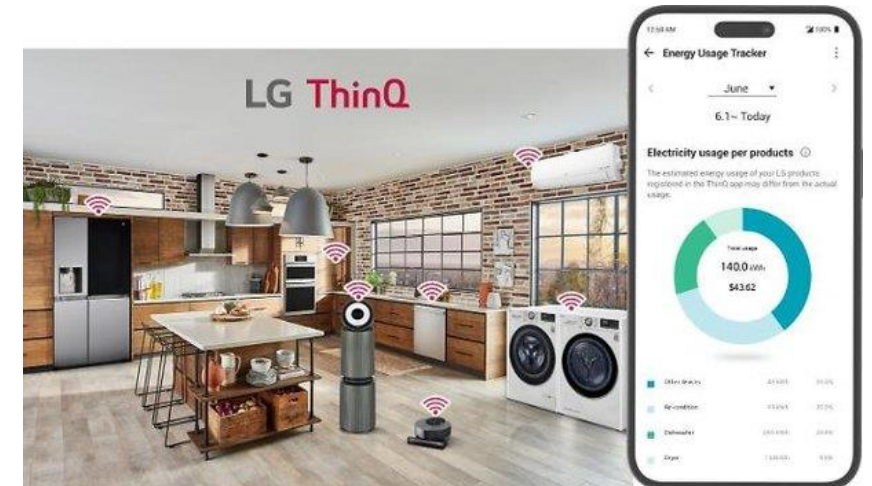
CES 2024 Keywords – Smart Home

➢ **Smart Home Innovation Award**

<Noline, anfire korea>

- Wireless fire detector
- Detects heat, smoke, temperature, humidity, dust, and carbon monoxide
- Extensive fire prevention with a data transmission range of over 3,000 feet

<Alertify, Alertify LLC>

- Plug-in room/home monitoring device
- Detects indoor smoking, noise interference, and occupancy violations for proactive measures
- Prevents noise complaints or property damage through real-time notifications

<Holo Button™, Vtouch, KR>

- Switch utilizing holograms
- Detects holograms and proximity sensors to be used as buttons

<Custo 1, Custo>

- Smartphone app-controlled smart parcel box
- Safely stores delivered parcels and grants access rights to family and friends

Source: CES 2024

CES 2024 Keywords – Smart Home

➢ Smart Home Innovation Award

<Airly Chair (Deluxe Version), Shanghai BackRobo Wellness>

- Home healthcare platform integrated with IoT
- Control of medical and smart home IoT devices in an integrated manner

<DeRUCCI T11 Pro, DeRUCCI>

- AIoT (Artificial Intelligence of Things) digital health smart mattress
- Responsive to movements and positions with 23 AI sensors and 18 airbags

<IDEA 65, Foshan SUNHOHI Smart Home Tech. Co.>

- Smart open-close windows
- Internally open system with smart control technology and advanced capabilities

<SQPV Glass, inQs Co.>

- Transparent solar glass (SQPV glass)
- Generates electricity from sunlight on both sides of the glass for energy utilization
- Nano-material stacking with a sandwich structure

CES 2024 Keywords – Digital Health

➤ **Changes in the digital health market**

- **Advancements in artificial intelligence and hardware technology**
  - Progress in artificial intelligence
  - Advancements in diagnostic and treatment technologies

- **Shift from diagnosis to medical treatment**
  - Development of the digital therapy market
  - Transition from diagnostic device-centric to treatment device-centric

- **Key insights from CES 2023**
  - The United States is moving towards progressing from diagnosis to treatment
  - South Korea focuses on diagnosis-centered digital health

- **Comprehensive consideration of regulation and market development**
  - Consideration of regulatory relaxation for market development is necessary

Implants

Patch

Apparel

Devices
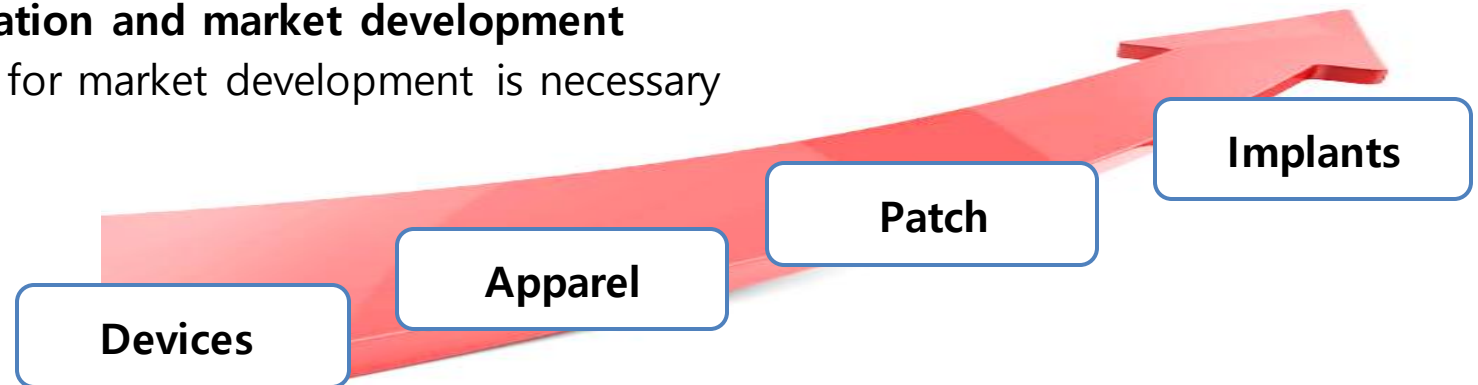
CES 2024 Keywords – Digital Health

▷ **Digital Health Innovation Award**

<AVEIR™ Dual chamber (DR) Leadless Pacemaker System, Abbott>

- The world's first dual-chamber wireless pacemaker
- 1/10 the size of traditional pacemakers, allowing synchronization of the right atrium and right ventricle

<Motionsleep, 10minds co. ltd., KR>

- Combined with VitalRing to improve sleep habits
- Measures cough sounds and oxygen saturation
- Adjusts the position of the head and back through the movement of seven airbags

<LIPCURE BEAM, AMOREPACIFIC, KR>

- The world's first to provide lip makeup and care simultaneously
- Customized lip management possible through a sensor for individual lip condition diagnosis
- Care and makeup are achievable through a personalized lip management system

<SleepInBody-Incline Smart Mattress, ANSSil, KR>

- Ensures stable sleep by analyzing the user's biological signals in real-time
- Provides personalized mattress height, angle, and firmness adjustments for users

CES 2024 Keywords – Digital Health

> ## Digital Health Innovation Award

<Bioimaging device for real-time vascular wellness, ATRI, KR>

- Thrombosis visualization device for early diagnosis of thrombosis
- Monitors the user's vascular health and enables early diagnosis of inflammatory diseases

<GenHome, Attoplex, KR>

- Rapid testing device with 100 times higher precision than existing rapid tests
- Combines molecular diagnostic technology with immune diagnostic technology

<EyeCane, CELLiCO, KR>

- Vision restoration solution for age-related macular degeneration (AMD) patients
- Real-time streaming through a 4K camera and mobile app after video capture
- Restores damaged visual areas through real-time images

<CERAGEM Home MediCare Platform, CERAGEM, KR>

- Home healthcare platform capable of healthcare through IoT
- Provides personalized health monitoring features to users
- Supports remote medical services

CES 2024 Keywords – Digital Health

➢ Digital Health Innovation Award

<Clear Endo Vision (C.E.V.), Lynk Solutec, KR>
- Endoscope cap with nano-oil coating for enhanced visibility
- Prevents blood, mucus, bacteria, etc., from adhering to the endoscope lens

<CellyticsTM NK - Rapid Immunity Check for All, MetaImmuneTech, KR>
- Digital health management tool for examining the immune system
- Confirms the presence of immune cells using lens-free imaging technology

<MindMics Heart Health System, MindMics>
- Heart health monitoring solution using TWS earbuds
- Monitors heart health through In-Ear Low-Frequency Hematocrit (IH)

<HEALTHKETCH, Moadata Co, Ltd, KR>
- Multi-modal AI-based personalized digital healthcare system
- Collects and analyzes health information in conjunction with the National Health Insurance Service API

CES 2024 Keywords – Metaverse

➢ **Key Trends in the Metaverse**

   ▪ **AR, VR, XR**
   - Service applications of augmented reality and virtual reality

   ▪ **Advancement through integration with various industries**
   - Diverse content experiences in the metaverse through XR technology
   - Diversification of ways for users to experience the metaverse through XR and haptic technology
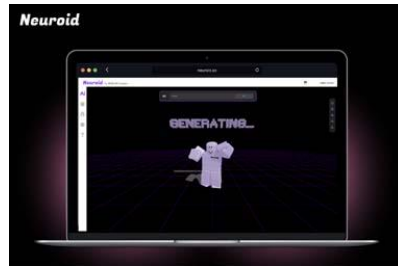
   ▪ **Generative AI and metaverse**
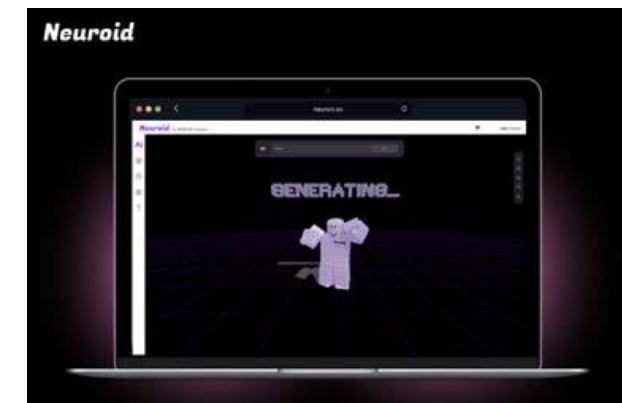
CES 2024 Keywords – Metaverse

➢ Metaverse Innovation Award

<NeuroidR™, NationA INC., KR>

- Game and metaverse character creation using generative AI
- Creating 3D/4D characters and motions through text, voice, and video inputs

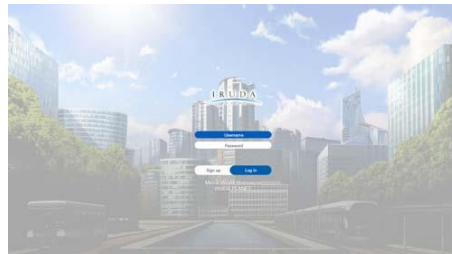### <Glinda AIMI, Visualsyn, KR>

- Metaverse content creation software
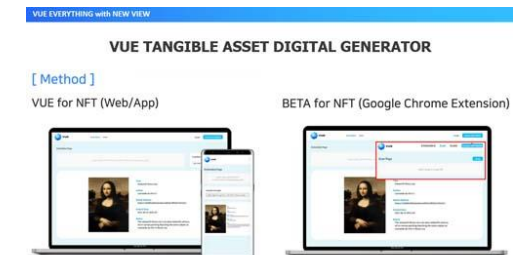- Using WebGL to enable individuals to easily create metaverse content

<IRUDA PLANET, IRUDA PLANET Inc., KR>

- Digital twin mirror worlds replicating the real world
- Utilizing real measurement-based 3D geographic information system data

<VUE EVERYTHING, WATERLABEL Pte. Ltd.>

- Technology to verify the authenticity of NFT products using blockchain

CES 2024 Keywords – Metaverse

➢ **Metaverse Innovation Award**

<NFTCamera, B-square Lab, KR>
• An application that takes a photo to verify the authenticity of NFTs
• Blockchain-based anti-counterfeiting and ownership verification

<Galeon Organ Donor NFT Card, Galeon>
• Proof of long-term donation rights using blockchain

<Twinit, EntreReality Co., Ltd, KR>
• 3D digital human generation technology
• Creating avatars of individuals photographed with a smartphone in under a minute

<GAUDIO Just Voice, Gaudio Lab, Inc., KR>
• Noise reduction and voice extraction using AI
• Synthesizing desired environmental sounds into the extracted voice

CES 2024 Keywords – HS4A

➢ **HS4A(Human Security for All)**
- ▪ Human Security for All
  - • Solving the problems facing humanity through technology
- ▪ A theme first introduced at CES 2023
  - • At the time, it was a novel concept that was difficult to grasp
    - ✓ The concept and approach were broad and ambiguous
- ▪ This CES 2024 emphasizes this theme
  - • The CTA anticipates that the concept of human security, solving global problems through technology, will become increasingly important
  - • CES participating companies are expected to actively utilize the concept of human security

➢ **HS4A(Human Security for All) Innovation Awards**

<AirFarm, Midbar Co., Ltd., KR>

• World's first air-injection type farm capable of food production anywhere
• Converts moisture in the air into water and recycles the moisture produced by crops

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<NEOGLY, ECLYPIA>

• Non-invasive blood glucose monitor
• Allows blood glucose measurement without the use of injections
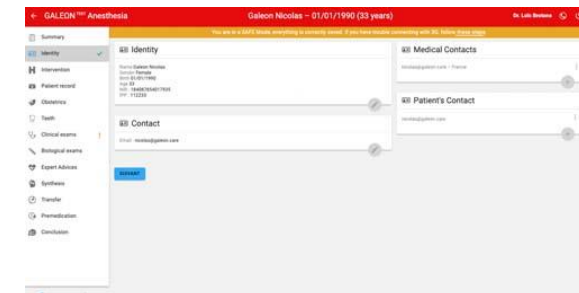

<Khanpure, Khanfilter Inc.>

• Sustainable solution for air pollution removal
• Integrated self-cleaning filter solves waste and wastewater
• disposal issues in existing facilities

<Galeon Hacker Defense Protection, Galeon>

• Protection of hospital and patient information from hacking
• Cyberattack detection and prevention

Source: CES 2024

CES 2024 Keywords - Sustainability

➢ **Sustainability**

▪ Methods to address climate change and environmental issues

• Technological advancements and convergence across various industries

• Utilization of recycling and sustainable materials

• Minimizing carbon emissions

• Ensuring energy efficiency

<MOFOREST, AEOL Korea>

• Cooling, ventilation, dehumidification, and air purification with up to 30% less energy consumption

• Utilizing MOF (Metal Organic Framework) technology

<Waste Management Solution Inside Buildings, SK EcoPlant>
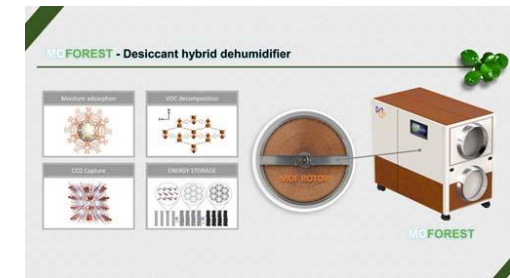
• Manages the entire process of collecting, sorting, and recycling urban waste within buildings

• Utilizes the AWCS (Automated Waste Collection System)

• Maximizes recycling and reduces carbon emissions

CES 2024 Innovation Awards of Korean Companies

➢ **Key Achievements at CES 2024**

▪ **Best innovation awards**
- 13 out of 36 best innovation awards
- Samsung 3, LG 2
- 8 best innovation awards from Korean startups

▪ **Innovation Awards**
- 143 Korean companies, out of 310 companies with innovation awards
  - ✓(KOTRA 1st, Dec.2023)
  - ✓Accounted for 46% of the total awards
  - ✓LG Electronics received 33 awards
    - OLED TV and its proprietary OS, webOS
  - ✓Samsung Electronics received 28 awards
    - Video display, mobile, and home appliances
- Diverse areas including Artificial Intelligence (AI), finance, security, and drones

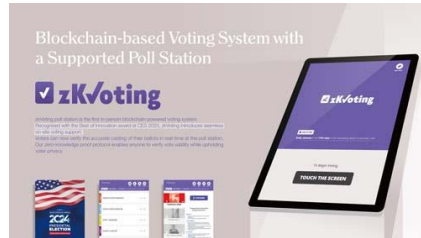LG Electronics' CES Innovation Award

LG Electronics' CES Innovation Award

CES 2024 Innovation Awards of Korean Companies

➢ Best innovation awards

<zkVoting, Zkrypto Inc., KR>

- Blockchain-based voting system
- Implemented on a private blockchain for enhanced security
- Ensures privacy and scalability using zero-knowledge proof technology on the blockchain

<Mand.ro Mark 7D , Mand.ro Co. Ltd., KR>

- Prosthetic fingers for individuals with partial hand amputations
- Customizable finger length, grip strength, drive speed, etc.

<FINTIN V1: The Most Accessible Qwerty-Communicator, ONECOM.CO., KR>

- Designed for visually impaired individuals, a Bluetooth communicator for smartphones to access digital information
- Applicable in various fields such as console game controllers and smart TV remotes

<AirFarm, Midbar Co., KR>

- World's first air-injection type farm capable of food production anywhere
- Converts moisture in the air into water and recycles the moisture produced by crops

CES 2024 Innovation Awards of Korean Companies

➢ **Best innovation awards**

<Seller Canvas, STUDIO LAB, KR>

- Supporting companies, sellers, and marketing agencies in need of e-commerce content
- AI marketing content creation tools and automated photo robots
- Analyzing and utilizing model photos to automate the entire content creation cycle

<Motionsleep, 10minds co. ltd., KR>

- Combined with VitalRing to improve sleep habits
- Measures cough sounds and oxygen saturation
- Adjusts the position of the head and back through the movement of seven airbags

<Trip.PASS Mobile Passport, Lordsystem, KR>

- A platform that integrates finance and tourism services
- Safely verifying digital identities and preventing passport theft and fraud
- Providing online and offline services such as payments, duty-free shopping, and transportation.
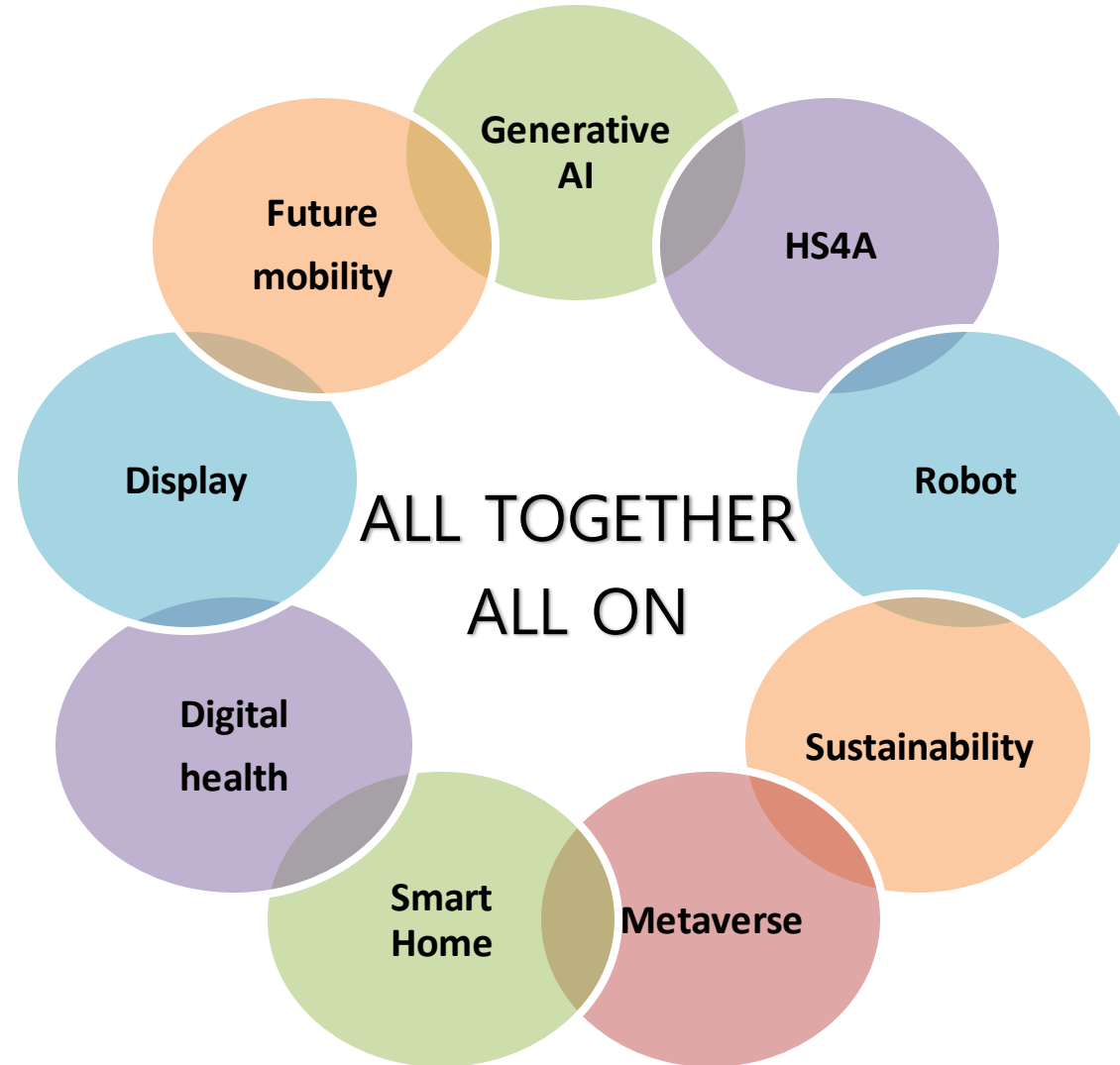

<IINK, Top Table Inc., KR>

- Personalized nutrition delivery system
- Customized nutritional supplements through the combination of software, food ink, structural design, and 4D stimulants
- Ability to specify melting points within the human body

Source: CES 2024

CES 2024 Keyword

> **CES 2024, Core Keyword**

THANK YOU!