

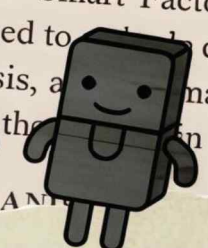
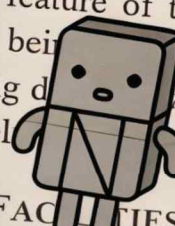
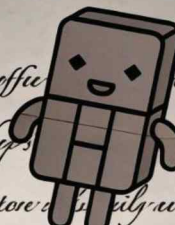
The Hanbat Herald

35th

December 2025

Assets = Liabilities + Equity

TYPES OF SCHOLARSHIP



Campus News

– The Hanbat Herald

National News

– How to read

financial statements

Cultural News

– Short-Form Content

International News

– Autonomous

Driving Technology

Not Used
(28%)

Used
(72%)

HANBAT HERALD

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My Life as a Chip

By Jeong Eui-seok

Editor-in-chief, Junior of Information and Communication Engineering

“You don’t need to know how every module of your life will connect in the future. Just build each one with care.”

I realized that my life works like a chip: each experience is a module, and together they make the system that runs me.

As students, we often think our lives must follow one clear path. But studying semiconductor design has taught me something different. A chip is not built all at once. It begins with small modules. You design one block, connect it to another, test how they work together, and slowly a complete system takes shape.

Sometimes, the way you connect those modules even changes the chip’s power efficiency and performance. In class, we also combine sensors in different ways, and each combination creates a new system. This made me think: maybe life works the same way.

I entered university at twenty-five, five years later than most of my classmates. Over the past five years, my life has taken several different directions. I studied business in Canada for two years and spent another year preparing to become a web designer. Later, during my military service, I wrote articles and handled photography work.

People sometimes ask me, “Weren’t you moving around too much?” or “Can you really continue in this major after all that?”

But the truth is, at twenty, I didn’t know what I wanted yet. I just did the best I could with what was in front of me. I studied English because I wanted to study abroad. I prepared for design because it inspired me at the time. And when I entered the military, I worked hard as a writer and photographer because that was my role.

At twenty-five, when I finally entered university, I worried I had wasted time wandering.

But as I took classes, joined competitions, and faced new challenges, something surprising happened: **my past experiences began to help me.**

Skills I learned in business, design, and writing suddenly connected like different modules on a chip. That’s when I realized: **no experience is useless.**

Even if the fields seem unrelated, each one becomes part of the “system” that makes you who you are. Just as a chip works because many different modules support each other, I am able to move forward now because each experience powers a different part of me.

And it also changed how I answer those questions about my major. I used to worry that I might switch paths again someday. But now, even if I do take another direction in the future, **I’m no longer afraid.** I trust the experiences I’ve built—they have carried me this far, and I know they will support me wherever I go next.

So I want to share this with anyone who is unsure about their path:

“You don’t need to know how every module of your life will connect in the future. Just build each one with care.”

If you give your best to the work in front of you—whatever it is—it will one day connect to something larger. You may not see the full circuit yet, but the pieces are already forming.

“Every experience becomes a module of who I am.”

Hanbat Friends



By **Lim Ji-yeon**

Cub Reporter, Junior of Building Systems Engineering



HBNU celebrated its 90th anniversary and introduced its new promotional characters, the “Hanbat Friends.” This project aims to reflect the values of the university by means of individuality and the meaning of the characters. Hanbat Friends has established itself as a mascot that enhances students’ school spirit and sense of belonging beyond mere promotion.

Hanbat Friends consists of four characters: HANI, BATI, NANI, and UTI. All four characters’ names come from the initials of HBNU. HANI has an active and adventurous personality and is named after H. BATI has a representative and rational image and takes its name from the B of ‘HANBAT’. NANI is both reserved and warm and is named after the N from ‘NATIONAL’. UTI has a bright personality with a smart and positive personality, and is named after the U from ‘UNIVERSITY’. Each character reflects the various personalities of HBNU members and provides students with a sense of familiarity.

Installation Locations

Hanbat Friends have already been installed in various locations on and off the campus. It is designed so that students and visitors can naturally experience the characters. Since the characters models were installed in front of major building entrances such as the N1 and S2, they are easy to spot when coming and going. There are also pictures of Hanbat Friends featured on the university bus. So they can be seen everywhere. Hanbat Friends images are used throughout promotional materials such as banners and posters on campus. The places where the characters are located are diverse. So students are naturally exposed to the moment of being with Hanbat Friends in their daily lives.

Student Reactions

According to the Goodmorning Chungcheong article, one student described Hanbat Friends’ first impression as “the first impression was ‘cutie’ itself.” In addition, the following reactions are confirmed in university reports and SNS. Among the many reactions, students are responding positively when they see them placed on campus. Some commented, “Our school feels brighter” and “There is a highlight between the simple building.” Freshmen and students from other regions increased their familiarity with the school by watching Hanbat Friends. They say the campus feels more familiar from the start. Some also mentioned that “the character sculpture lit at night is pretty.” and “I want to take a picture with my friend like a photo zone.”

Hanbat Friends is actively used in promotional materials both inside and outside the school and at various events. Characters appear at university functions such as matriculation ceremonies and festivals to greet students. They convey the image of the university through posters, information materials, and online promotional content. Students come upon characters in their daily lives and naturally form closeness with the university. These efforts help present HBNU as a lively and welcoming institution, especially for international students and visitors. In particular, for international students and visitors, it forms a positive perception that HBNU is an open space.

Hanbat Friends is a symbol representing universities beyond just characters. The character’s personality and harmony show diversity, which creates a sense of belonging among students. This symbolism enhances the university’s brand value. HBNU will continue to promote the school’s identity and vision through Hanbat Friends.



TOPCIT Regular Assessment

By Seo Jin-jeong

Cub Reporter, Junior of Computer Engineering

In the era of the Fourth Industrial Revolution, IT competency has become an essential skill for students across all disciplines. Recognizing this, HBNU provides full support for students taking the TOPCIT exam, offering them an opportunity to objectively assess their abilities and grow as future leaders of the digital age.

What is TOPCIT and How Can Students Prepare?

TOPCIT (Test of Practical Competency in IT) is a national assessment organized by the Ministry of Science and ICT. The test, scored out of 1,000 points, measures practical IT competencies required in real industry settings, beyond theoretical knowledge. Students can prepare for TOPCIT by consulting official study guides on the TOPCIT website. Consistent hands-on practice and project experience are crucial for high scores.

Exclusive Support for HBNU Students

Recognizing the importance of TOPCIT, HBNU fully covers the 48,000 KRW test fee through the SW-Centered University Project Group. This exclusive benefit distinguishes the university and demonstrates a strong commitment to student success.

Enhancing Employment Competitiveness: Benefits for Examinees

- Scholarships for Top Scorers: The top three students who score 400 points or higher are rewarded a monetary prize of 300,000 KRW, 200,000 KRW, and 100,000 KRW respectively.
- Priority for Overseas Internships: TOPCIT examinees are eligible for priority in international internships organized by the SW-Centered University Project Group.
- Preferential Program Selection: Examinees receive preferential consideration for other university programs, opening up more growth opportunities.
- Complimentary Meal Vouchers: All examinees receive a meal voucher.

TOPCIT: A Step Toward Becoming a Skilled IT Professional

Beyond being an exam, TOPCIT is a valuable opportunity for students to assess their skills and plan their future careers. HBNU is dedicated to fostering self-development among students, nurturing future leaders of the IT industry. This challenge is not just a test, but a stepping stone toward realizing each student's potential.

Introduction to HBNU Library Learning Spaces

By Kim Da-young
Cub Reporter, Freshman of Economics

The HBNU Library offers various learning spaces, but some remain underused because many students are unfamiliar with how they work. In particular, new students often struggle with the reservation process and locating each space. Therefore, this article outlines the types of learning spaces in the library and ways to use them efficiently.



Smart Lounge

Located on the 1st floor, the Smart Lounge is an open space where students can study and relax freely. It features a wide circular table, a long table with sofa seating, and a desk equipped with power outlets for laptop users. Its open structure and diverse seating options make it a suitable space for long study sessions.

Major Study Room

The major study room on the 1st floor of the library is stocked with books from various academic fields, allowing students to easily find materials related to their studies. Five private seats are available on a first-come, first-served basis without reservation. Its quiet and calm environment makes it ideal for focused study.

Library Reading Room

There is a reading room on the 2nd floor of the library, providing a highly focused learning environment. Its partitioned desks create an immersive atmosphere similar to a typical reading room by minimizing distractions. The room's quiet setting and large number of seats make it especially helpful for students who need strong concentration. To use this reading room, students must reserve a seat through the seat assignment machine at the library entrance or through the Smart Campus App.

Study Lounge

The study lounge on the 3rd floor offers an open and relaxed atmosphere for learning. This space includes various seating options, such as a multi-person table and a circular desk, allowing students to choose seats that match their study style or needs. On one side of the lounge, there is a study room where students can freely hold meetings and group study sessions. Study rooms can be booked on a first-come, first-served basis through the Smart Campus App.

Multimedia Room

The multimedia area on the 4th floor is a spacious environment suitable for team projects and group activities. Inside, there is a study room equipped with a whiteboard and an electronic screen for presentations, group discussions, club activities, and accessing audiovisual materials. The study room operates on a reservation basis, and the room key must be returned upon checkout.

When students actively make use of the library's various learning spaces, they can experience greater convenience and learning efficiency by selecting an environment that suits their needs. Understanding the characteristics of each area helps students use the library more efficiently and systematically.

HBNU Student Dormitory

By Jeong Sei

Cub-Reporter, Freshman of Chinese language

A university is a place where many people from around the world come to study. To support this purpose, universities should provide an environment suitable for both learning and living. For this reason, they need to provide students with an environment conducive to both learning and daily life. At HBNU, several student dormitories offer various convenience facilities, including a community hall, a study room, a cafeteria, a fitness room, a table tennis room, a coffee shop, and a convenience store.

Learning Spaces in the Student Dormitory

The first is the Community Room in the dormitory. It is located in D7 Mirae-dong, and all dormitory residents can use it. This place has comfortable sofas and tables. So students are allowed to study and communicate freely with other students. It is also equipped with a TV and a whiteboard, which are useful for group study and discussions. Next is the Reading Room. This study room is located on the 2nd floor in D7 Mirae-dong and 1st floor in D8 Injae-dong, providing an environment where many people can focus on their studies.

Fitness and Dining Facilities

HBNU student dormitory offers more than just a place to sleep. To support students' health, well-being, and a balanced life, it offers a fitness room where students can exercise and strengthen their social bonds. This contributes to physical health as well, especially to fostering a sense of community. In addition, the dormitory includes a cafeteria. The cafeteria supports balanced meals every day to promote students' healthy lifestyles. Good nutrition habits not only support physical health but also have a positive impact on academic concentration.



Convenience and Lifestyle Facilities

The HBNU dormitory also includes a coffee shop and a convenience store where students can buy snacks and drinks. The coffee shop serves as a convenient space to bond with friends or continue studying. The convenience store sells daily necessities, making it a versatile space that meets all the students' everyday needs. Furthermore, a lot of dormitory student sometimes have their meals at the convenience store and coffee shop.



The Value of the Dormitory

The HBNU dormitory goes beyond offering simple accommodation, providing convenient facilities that support both study and daily life. The dormitory helps students strike a balance between learning, rest, and social interaction, fostering a strong sense of community. Through this environment, students can grow both academically and personally, enjoying a more meaningful university life. It also fosters cooperation and independence among residents. In this way, the dormitory becomes a true home away from home where students can live, learn, and grow together.

The Hanbat Herald

By Jeong Eui-seok, Editor-in-chief, Junior of Information and Communication Engineering

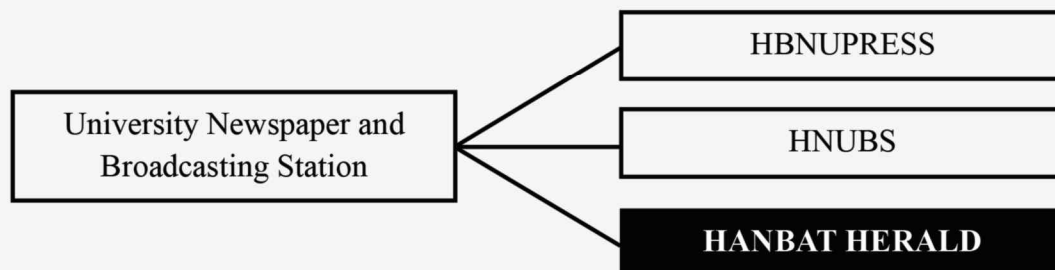
“Journalism serves a crucial role in society by educating the public, fighting corruption, and promoting sustainable development.” This line comes from UNESCO’s 2024 report *Journalism for Development*. As the quote illustrates, journalism is one of the pillars that support society. The same applies on campus. Campus journalism represents students, delivers news throughout the school, and records interactions with universities at home and abroad. In doing so, it helps create a sustainable campus community and make a positive impact beyond. HBNU also has its own campus media, and among them, the *Hanbat Herald* plays a leading role in making our university more global.

Hanbat Herald Origins

For over 80 years, HBNU has disseminated news through its Korean-language newspaper and broadcasting station. In 2009, following the trend of globalization, the university launched its first English-language newspaper, the *Hanbat Herald*. At that time, President Seong Dong-ho remarked, “The *Hanbat Herald* will lead our university into a new era. I sincerely hope it will help our school stand among the world’s top universities.” Since its first issue in 2009, the paper has published 35 editions as of December 2025. For 16 years, despite numerous changes, the *Hanbat Herald* has consistently delivered news both domestically and internationally.

Organization and Structure

The *Hanbat Herald* is part of the University Newspaper and Broadcasting Station, which operates under the president's office with university funding. The station consists of three units: the Korean newspaper, the English newspaper, and the broadcasting team. The English newspaper office is in Student Hall (S2), Room 405. The staff consists of one editor-in-chief, four section leaders, and nine reporters. The editor-in-chief supervises overall operations, semester publishing plans, and administrative tasks. Section leaders are responsible for Editorial, Public Relations, and Management, with two leaders assigned to the Editorial Department for article quality. Reporters are assigned to departments and work together under each leader.



Rules and Regulations

The *Hanbat Herald* operates under clear rules. There are promotion rules and work rules. The promotion path is cub reporter → regular reporter → section leader → editor-in-chief. New members begin as cub reporters after passing the recruitment test, and after one year, they automatically advance to regular reporters. Section leaders are selected from regular reporters when a vacancy occurs, through interviews with current leaders and the editor-in-chief. Those who serve as section leaders for at least one year can be appointed editor-in-chief if the position becomes vacant, with the agreement of the former editor-in-chief and current leaders. The editor-in-chief's term is two semesters, while section leaders serve for three semesters, which ensures stability and continuity.

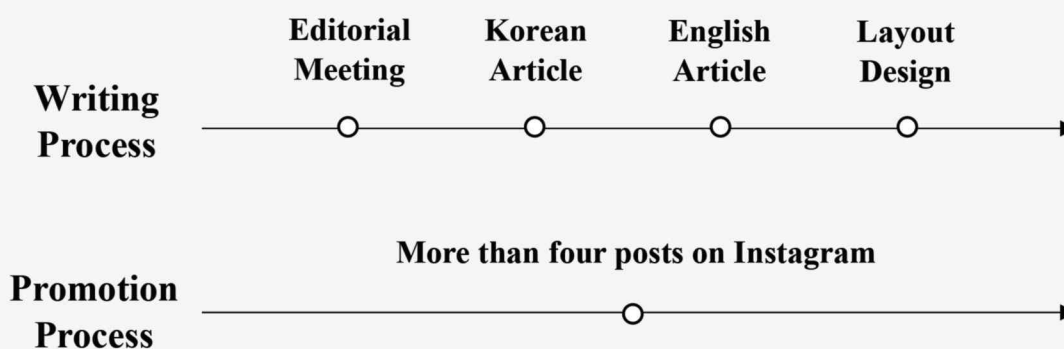
A central rule is the “3-out system,” which ensures that members strictly keep deadlines. Missing a deadline, being absent, or arriving late to meetings or study sessions counts as one “out.” After three “outs,” the member is dismissed. This system reinforces responsibility as representatives of the university's media.

Activities of the Hanbat Herald

The main activities during each semester include writing articles and promoting the newspaper. The paper is published once per semester, and all members take part. Article writing begins with an “Editorial meeting,” where members suggest ideas in four sections: Campus, National, International, and Cultural. After the discussion, the topics are chosen. Drafts are first written in Korean, edited for flow and format, and then translated into English. Final manuscripts are completed after feedback and proofreading, and reporters design the layout on their own. The finished newspaper is distributed on campus, to Korean high schools and universities, libraries, and overseas partner schools.

Promotion is mainly through Instagram, with more than four posts uploaded each semester. Posts include introductions to the newspaper's activities and simple English expressions for students. This work is led by the PR Department.

A Single-semester Schedule



Types of Articles

The *Hanbat Herald* covers a wide range of topics as a campus English newspaper. It introduces students who won competitions, highlights the university's history, and promotes exchange activities with partner universities. It also features study-abroad stories from HBNU students and experiences from international students, highlighting the university's global dimension. At the same time, it covers broader issues such as the Olympics, the rise of single-person households, and artificial intelligence (AI). In this way, the *Hanbat Herald* goes beyond campus and connects to global trends.



Now, let's briefly answer some of the frequently asked questions.

Q1. When is the recruitment for new reporters?

Recruitment is held at the start of each semester. The first stage is an Application Review, followed by a written test and interview. The combined score determines the final new members.



Q2. Do I need strong English skills? How do members study English?

High-level English is not required. If you can read and write short essays, that is enough. Since members exchange feedback many times during article writing, even students who are not confident in English can improve. In addition, English study groups are held weekly, including speaking practice, TOEIC preparation, watching English videos, and reading CNN articles with discussion. This environment naturally helps members strengthen their English.

Q3. What support and benefits are available?

The biggest benefit is 24-hour access to the office, which students use for both article deadlines and exam preparation. At the start of the semester, there is an appointment ceremony that makes members feel proud to be university reporters. In addition, section leaders and the editor-in-chief receive scholarships, which is another advantage.

To give a more personal perspective, let's hear from a former reporter.

To give a more personal perspective, **let's hear from a former reporter.**



Q1. How did the *Hanbat Herald* influence your university life and career?

The most valuable experience was being able to write articles of my own. By gathering information, organizing my thoughts, and delivering them to readers, I learned how to express my perspective clearly and confidently. It also gave me a sense of responsibility, knowing that my words could influence others.

In terms of my career, I have always been interested in working in overseas business, so having a space to regularly practice English communication was extremely helpful. Collaborating with fellow reporters to review drafts, discuss ideas, and study English together naturally improved my language skills. Overall, the *Hanbat Herald* helped me build both confidence and practical communication abilities that continue to support me today.

Q2. What did you learn the most from your time here?

I developed strong management skills. Beyond writing, planning events like team-building retreats, conducting interviews, and coordinating schedules taught me how to organize and lead. I also learned how to cooperate with others through teamwork.

Q3. Any advice for juniors interested in joining?

Try everything you want during your university years. For me, the *Hanbat Herald* was the core of my college life. I learned and experienced so much here, and I hope juniors will also challenge themselves without hesitation.

Balancing academics and reporting is never easy. Yet, the process of planning articles, sharing opinions, and completing one issue together is a unique experience. Reporters gain teamwork and responsibility, which become valuable assets even after graduation. Since 2009, the *Hanbat Herald* has carried on this journey. I hope many more students will join and build upon it as a vital bridge between campus and society.

UNESCO. *Journalism for Development: The Role of Journalism in Promoting Democracy, Political Accountability and Sustainable Development*. Paris: UNESCO, 2024.



By Baek Seong-yun, Cub Reporter, Sophomore of Business Administration

At HBNU, the Humanities and Social Sciences Convergence Talent Cultivation Project (HUSS) fosters creative and practical problem-solving skills through interdisciplinary integration. As its name suggests, the project focuses on majors in the humanities and social sciences. By promoting interdisciplinary convergence and inter-university cooperation, the project cultivates students with strong convergent thinking skills and encourages innovative approaches. Students analyze social phenomena from various perspectives and develop problem-solving skills. They also receive practical and innovative education aligned with social needs and global trends. In modern society, the humanities and social sciences play a crucial role in addressing real social problems such as issues in risk society beyond the mere delivery of theories. In particular, in a rapidly changing social environment, majors in the humanities and social sciences serve purposes beyond job preparation, playing an important role in enhancing quality of life and fostering social consensus. Accordingly, HUSS operates a variety of programs designed to strengthen academic depth and core competencies.

HUSS provides students with programs that help them develop core competencies such as critical thinking, communication skills, analytical skills based on understanding society, culture, and humanity. Within each major, students analyze complex social problems and develop practical skills through theoretical learning and hands-on practice. In addition, cross-disciplinary learning is made possible through curricular and extracurricular programs, allowing students to design a wide range of career directions.

HUSS's curricular activities

The curriculum seeks to cultivate talents capable of solving problems in a hyperconnected society, where information technology permeates daily life and networks connect every part of society. To achieve this, HUSS offers a convergence-based curriculum, including IT competency enhancement courses and credit-exchange programs with consortium universities such as Suncheon National University, Soonchunhyang University, Sunmoon University, Sejong University, along with existing HBNU courses. To complete the program, students must earn 21 to 36 credits. Scholarships and opportunities to participate in international programs are awarded to students who complete a micro-degree or higher during the convergence process. In addition, HUSS operates a standard field training semester system. Through cooperation with training institutions and companies, students move beyond theory and gain real-world experience.



HUSS's extracurricular activities

Extracurricular activities are also offered in a variety of ways. The first to be introduced is a joint program.

Global Camp for Social Problem Solving	IT Expert Training - Coding/Python
Provides opportunities to enhance the ability to respond to global risk societies through overseas field experiences to solve social problems in the international community.	It provides opportunities for non computer majors to strengthen their IT skills, such as web front-end technology and learning Python programming necessary for big data and artificial intelligence technologies

Hanbat National University Specialized Program

Special Lecture Series Featuring Experts	HUSS Supporters
Provide opportunities to cultivate multifaceted thinking skills through special lectures to invite experts from each field to discuss the problems of a hyperconnected society and propose solutions	Provides opportunities to directly participate in the promotion of various programs and content production to foster cross-disciplinary talent

In addition, support is provided for participation in problem-solving societies as well as domestic and international competitions. All programs presented above are credited units upon completion.

As such, HUSS provides opportunities to strengthen core competencies through various major convergence based on a deep understanding of the humanities and social fields. Through HUSS, students can develop their ability to solve global social problems and further set their own career direction.

Today, the role of the humanities and social sciences is becoming increasingly important. It is an era in which it is necessary to consider how to apply it to solving actual social problems beyond simple knowledge acquisition. HUSS actively supports students in understanding society and developing the ability to analyze and solve problems from their own perspective.

Through HUSS, students can connect with practical careers based on a deep understanding of their major, and after graduation, they will grow into humanities and social convergence experts who fulfill their social responsibilities. HUSS supports students in growing into convergent talents who can contribute to solving social problems beyond academic achievement. Through this education, students become the cross-disciplinary professionals that modern society needs.

<https://hanbathuss.org/>

RACING TEAM

MIRACLE

By Kim Si-yeon, Reporter, Sophomore of Electronic Engineering

Have you ever watched *F1: The Movie*? Racing is a complex art that blends speed, technology, and the passion of a team. That stage is not limited to the screen. It is unfolding right here at Hanbat National University. Applying theories learned in class, members of the student racing team bring them to life by building real cars and competing in national and international events. This team is called MIRACLE. They design and construct vehicles across categories such as Baja, Formula, and Autonomous, creating their own racing cars. Their work continues late into the night, with designs spread across desks and welding sparks lighting the workshop, while their uniforms are soaked with sweat. Out of this dedication, their cars take shape. Now, let us take a closer look at the spirit and achievements of Team MIRACLE.

In 2025, the MIRACLE racing team will build a total of four vehicles: one Baja car, two Formula cars, and one Autonomous car. The Baja car focuses on endurance and suspension performance in off-road environments, emphasizing the strength and stability required to tackle rough terrain. The Formula car is designed for track racing, where high-speed performance and cornering skills are tested. Aerodynamic design and acceleration are the keys to success. Finally, the Autonomous car demonstrates the ability to drive on its own by utilizing artificial intelligence and various sensors.

STUDENT-BUILT VEHICLE COMPETITION CATEGORIES



	Baja	Formula	Autonomous
Competition Focus	Off-road durability and driving performance	High-speed and cornering performance on track	Evaluation of autonomous driving technology (sensors, AI, control)
Vehicle Features	Small off-road buggy style; strong roll cage & suspension; can drive on mud, sand, rocky terrain	Racing car similar to F1 kart; designed for high speed, cornering; lightweight and aerodynamic body	Based on Baja or Formula car; equipped with LiDAR, camera, GPS; controlled with onboard computer/ROS
Core Competencies	Mechanical design skills (frame, suspension); durability and stability	Vehicle dynamics control (high speed, braking); aerodynamics and lightweight design	Real-world road simulation
Analogy	Off-road Jeep or buggy	Mini F1 racing car	Future autonomous car

The MIRACLE racing team has a proud tradition spanning more than 25 years. In recent competitions, the team achieved remarkable results. In the KSAE Baja Student Competition, MIRACLE won the Bronze Prize in 2020 and claimed the Overall Championship in 2021. In the KASA Creative Mobility Competition, the team earned the Silver Prize in the EV division in 2020 and followed by a Gold Prize in 2021. In 2024, MIRACLE received the Silver Prize in Baja Student Korea and made its first attempt in the Formula division, earning an Encouragement Prize, which was a meaningful first step. Building on these achievements, the team continues to grow and is preparing for even greater success in the Formula Student Korea 2025 competition.

As a member of the MIRACLE racing team, the reporter witnessed the challenges of the vehicle production process firsthand through direct participation. Every step of building the car was a challenge shared by all team members. When design drawings did not match the actual parts, we had to remake components countless times, and even small mistakes often forced us to revise the entire structure. In the sweltering summer workshop, we repeated welding and machining dozens of times, soaked in sweat. Just before the competition, unexpected breakdowns kept us awake through the night as we rushed to complete repairs. In the end, however, the team managed to place the car on the track. Through this process, the students gained more than just technical skills. They developed collaboration, resilience, and problem-solving abilities that will remain valuable far beyond the competition.

MIRACLE's self-built cars are the culmination of countless trials and errors, embodying the dedication and hard work of its student members. Building on these experiences, the team continues to grow by challenging itself on stages both big and small. Their endeavors across Baja, Formula, and Autonomous categories demonstrate HBNU's technological capability and creativity. With the 2026 competitions ahead, MIRACLE is expected to achieve meaningful results once again. The journey of this team is far from over, and continued interest and support for MIRACLE's challenges will be invaluable as they move forward.



HBNU SCHOLARSHIP PROGRAMS

By Cho So-hee, Cub Reporter, Freshman of Economics

INTRODUCTION

What do you think is the biggest burden in university life? Although HBNU has relatively low tuition fees as a national university, living and tuition expenses can still be burdensome. To ease these difficulties, HBNU offers a variety of scholarship programs according to its yearly budget. These scholarships are not only for students with excellent academic achievement. They also aim to support students based on their individual circumstances, including financial condition, student activities, and participation in international exchange programs. However, some students are unaware of scholarship opportunities because they believe scholarships are only for high grades or are unsure of the requirements. This article explores the various scholarship systems offered at HBNU.

TYPES OF SCHOLARSHIP PROGRAMS



HBNU offers various special scholarships for both domestic and international students, including those for student activities and need-based. Notable examples include the Academic Excellence, General Study Abroad, Campus Work-Study, and Achievement Scholarships.

Academic Excellence Scholarship

The most well-known scholarship is the Academic Excellence Scholarship. It is awarded to current students who completed at least 12 credits in the previous semester and achieved outstanding academic results. Depending on GPA, tuition fees may be fully, half, or partially covered. Students are automatically selected based on department recommendations, but those who take a leave of absence, receive academic probation, or exceed the maximum duration of study are excluded. Furthermore, students must also fulfill the requirements for non-curricular education units (excluding departments dedicated to adult learners).

General Study Abroad Scholarship

The General Study Abroad Scholarship is designed for international students and is divided into categories for new and continuing students (A/B/C), with awards granted according to their level of proficiency in the Test of Mastery in Korean (TOPIK). For new students, scholarships are awarded in the first semester based on admission results: Grade A covers full tuition, Grade B covers 50 percent, and Grade C covers 30 percent. For continuing students, those with a GPA of 3.70 or higher in the previous semester receive Grade A (full tuition), those with a GPA between 3.40 and 3.69 and who completed at least 12 credits receive Grade B (50 percent tuition), and those with a GPA between 3.00 and 3.39 and who completed at least 12 credits receive Grade C (30 percent tuition).

Work Study Scholarship

The Campus Work-Study Program provides the Work Study Scholarship. This is a scholarship that students can relatively easily access, providing them with work experience and financial support. Qualified applicants are current students (excluding those on leave of absence, extended semesters, or graduation deferment) who wish to participate in work-study, have earned at least 70 points in the previous semester, and fall within financial aid level 9 or lower.

Achievement Scholarship

The Achievement Scholarship motivates students preparing for employment. It is divided into Grade A and B, and is awarded to students with a GPA of 3.0 or higher in the previous semester who have obtained employment related certifications or language test scores. Achievement scholarships A and B can only be conferred once during a student's enrollment, and only certifications obtained after admission to the university are recognized. Achievements during a leave of absence are not counted, and for seniors, credits from the previous semester are not considered. Therefore, applicants must carefully check the selection criteria before applying.

HOW TO APPLY FOR CAMPUS SCHOLARSHIPS

At HBNU, many campus scholarships are awarded only if students apply directly. Therefore, students must submit their own applications, which can be done through the Integrated Academic System. The application process is as follows: Integrated Academic System → Scholarship Management → Scholarship Application Management → Apply for Scholarship. In addition, students can find more detailed information about eligibility and application procedures. Go to Academic and Scholarship Information → Scholarships → On-Campus Scholarship Programs, and search for "Campus Scholarship Application Guide" in the search bar. Students who wish to apply for scholarships are encouraged to review the detailed instructions through the method explained above.

RCL

By Jeong Sun-woo, Cub Reporter, Sophomore of Industrial Engineering

Daejeon is recognized as the leading science city of the Republic of Korea. For example, there are the Korea Institute of Machinery and Materials (KIMM), the Electronics and Telecommunications Research Institute (ETRI), and the Korea Aerospace Research Institute (KARI). However, their success has not been fully extended to universities or local companies. Actually, the number of companies that receive technology support from Daedeok Innopolis research institutes is 6.2 percent. It is of low value. The Korea Institute of S&T Evaluation and Planning (KISTEP) points out that institutional constraints prevent research achievements from being translated into business outcomes. Also, current policies and institutional support are insufficient. To solve the situation, HBNU operates the Regional Collaboration Lab (RCL), a program conducted by RISE.

Running structure

RCL is conducting joint research and development in collaboration with companies at designated sites. As a result, it serves as a platform for producing papers, patents, technology transfer, startups, and commercialization outcomes. Unlike a simple research grant, RCL is a platform designed to support a program. The platform plans to generate industrial results by combining the company's idea research with the organization of technology, and the company. The operating structure consists of 3 steps. The first step is to replicate that basic experience, analyzing technical tasks. The second step is expanded from tasks of common R&D (Research and Development) with Government-funded Research Institutes (GRIs), the final step to create deliverables to include paper, patents, technology transfer, and startups. The RCL program runs from August 2025 to January 2026. Each team received about three million won, plus up to two million won for publication fees. The supplement list includes expenses such as research material costs, meeting expenses, consulting fees, seminar hosting expenses. The research topic is National twelve technology strategy (semiconductors, secondary batteries, artificial intelligence (AI), quantum) and Daejeon 6th strategy industry (space and aerospace, bio-health, nano and semiconductors, defense, quantum, robotics). The eligibility should be a researcher to join the HBNU family company, an HBNU student, teaching staff, GRI researcher. Also, participants should apply results to patent at least one and at least one during run time. The research team that wants to participate should write as per the principal form. The application needs to write a research team, participating institution, and collaboration structure. In addition, university faculty and researchers at government-funded research institutes have at least five people.

To the mandatory list of research consisting

Additionally, there are four writing lists to join the program. First, the research plan must include a concentrate output plan, clearly stating the research objectives, strategic relevance, roles of each institution, plans for basic experiments and technical analysis, and expected outcomes. Second, the team leader must obtain consent from all participants and submit a Personal Information Consent Form together with the research proposal. Third, upon completion of the project, a final report must be submitted. The report should include a summary of the research process, outcomes such as publications and patents, a record of collaboration activities, and plans

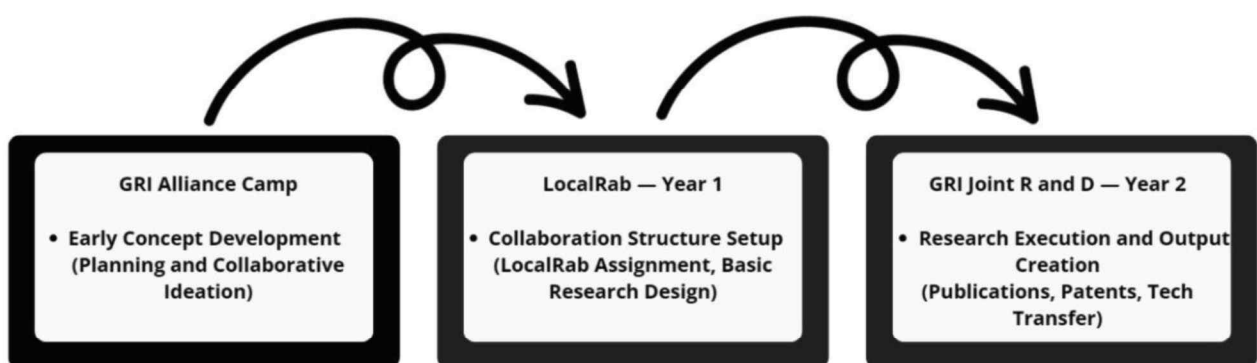
for follow-up R&D. Finally, meeting minutes must be maintained throughout the research. The minutes should record the date and time, attendees, discussion points, and follow-up actions, serving as a mechanism to ensure transparency and accountability.

Long-term goals and research themes

The long-term goal of RCL is to ensure that research does not stop at academic outputs but connects directly to industry. RCL's research themes align with the 12 National Strategic Technologies and Daejeon's six strategic industries. As a case in the space and aerospace domain, the Korea Aerospace Research Institute (KARI) in Daejeon successfully launched the Nuri (KSLV-II), making Korea the world's seventh nation to place a satellite into orbit, and is now pursuing lunar exploration and next-generation launch vehicles. In the United States, the Regional Economics Applications Laboratory (REAL) at the University of Illinois is notable for advancing research outcomes beyond academic papers into forms applicable to policy and industry, integrating economics, mathematics, urban studies, and computer science to solve regional problems with data.

If RCL produces results across the 12 strategic technologies and Daejeon's six strategic industries and builds a framework that connects outputs not only to publications and patents but also to industry and markets, the program can strengthen individual capabilities and have a significant impact on both Daejeon and the nation. The cases of REAL and KARI illustrate the potential industrial impact when RCL sets the right goals and sustains its research.

Previously, RISE operated the "Village-Problem Living Lab," a program designed to solve local issues. Building on that experience, RCL is expected to evolve beyond a simple research-support initiative into a program that makes a tangible contribution to region-based projects.



Designed in Canva



By Park Min-seo, Reporter, Sophomore of Chemical and Biological Engineering

The manufacturing industry is undergoing a rapid transformation. Instead of traditional machine-driven factories, “smart factories,” which integrate automation, data analytics, and artificial intelligence, have become a global trend. This change is also influencing university education. Beyond learning theory in classrooms, students are now expected to gain hands-on experience in environments that closely mirror real industrial sites.

HBNU is leading this movement through its Smart Factory Center, which focuses on nurturing talent for the future of smart manufacturing. In 2018, HBNU was designated as a leading institution for innovation in the field of smart factories during the Fourth Industrial Revolution. This led to the establishment of the Smart Factory Center and the Smart Factory Convergence Program, which are still active today. The Smart Factory Center serves as a comprehensive platform for education, research, and industry–academia collaboration, offering students much more than a simple laboratory.

WHAT IS A SMART FACTORY?

A smart factory represents the evolution of conventional automated factories. While automated factories operate based on pre-programmed instructions, smart factories employ artificial intelligence, big data, and machine learning technologies to analyze information and make autonomous decisions. Every stage of the process can be tracked in real time, enabling optimized responses to environmental changes. In essence, it is an “intelligent factory” capable of operating autonomously, with little human intervention.

CROSS-DISCIPLINARY LEARNING

The defining feature of the Smart Factory Center is its independent and interdisciplinary structure. Beyond being confined to a single department, the center provides education that spans design, control, big data analysis, and automated processes. This enables students to collaborate across multiple fields, much as they would in real industrial settings.

ADVANCED FACILITIES AND HANDS-ON TRAINING



At the center, state-of-the-art facilities such as the Smart Factory Testbed and the Smart In-Factory Logistics Lab are available. The testbed provides an integrated platform where students can explore processes ranging from simple packaging to overall process flow control.

◀ Smart Factory Testbed

The Logistics Lab, which applies IoT-based in-factory logistics systems, enables students to simulate product transport and logistics optimization using a pallet-based transfer system. Through these facilities, students learn not only how to operate machines but also how to analyze production data and improve processes.

Smart In-Factory Logistics Lab ▶



EXPANDING THROUGH PROJECTS AND INDUSTRY PARTNERSHIPS

Beyond regular coursework, the Smart Factory Center offers a range of activities, including competitions, hands-on camps, and capstone design projects to strengthen students' practical skills.

The center also actively collaborates with local companies through the LINC 3.0 Project Group. In this program, students tackle real-world problems faced by businesses, gaining valuable field experience while companies benefit from their fresh, innovative ideas.

INDUSTRIAL APPLICATIONS IN PRACTICE

Smart factories are already achieving tangible results in industry. For example, Samsung SDS's AI-based solution "Nexplant" reduced problem-solving time for manufacturing equipment from 12 hours to just 10 minutes. LG Electronics has also utilized IoT and AI to lower defect rates, improve production efficiency, and secure stable data transmission through its 5G-specialized network solution, earning domestic certification for network equipment in 2024.

These cases demonstrate how smart factories enhance industrial competitiveness, closely aligning with the education provided at HBNU's Smart Factory Center.

A MODEL FOR FUTURE-ORIENTED EDUCATION

The Smart Factory Center is more than just a training facility; it is an educational platform preparing students for future industries. Experience in interdisciplinary collaboration equips students with the adaptability required in diverse workplaces.

With the smart factory market growing by 10 percent annually, companies are actively seeking specialists in the field. In this context, practice-oriented and interdisciplinary education in smart manufacturing is emerging as an essential trend in engineering education. The Smart Factory Center at HBNU stands as a prime example, growing into a meaningful platform for students, industry, and the local community alike.

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How to Read Financial Statement

By **Kim Hyun-hee**, Reporter, Senior of Accounting

KOSPI is a stock index calculated based on the changes in the Korea Exchange, and it serves as a representative indicator of the flow of the Korean economy and stock markets. KOSPI exceeded 3,200 for the first time in three years and ten months, amid expectations of the Bank of Korea's interest rate cut, the government's supplementary budget and policies supporting the stock market. As a result, individual investors' interest in stocks has also increased. The number of stock accounts rose by more than 1 million, while the average daily trading by individual investors increased by 30.55 percent for purchases and 32.1 percent for sales. As transactions expand, the liquidity of the stock market, which affects the formation of market prices. So, let us learn to way of the company's investment.

Financial Statements

Investors can use financial statements to estimate future cash flows and assess a company's financial health. Financial Statements include the Statement of Financial Position, Income Statement, Cash Flow Statement, Statement of Changes in Equity, and Notes.

$$\text{Assets} = \text{Liabilities} + \text{Equity}$$

The statement of financial position offers information on assets, liabilities, and equity. Assets refer to economic resources controlled by companies because of past events. Assets include cash and cash equivalents, accounts receivable from sales of goods or services.

Debts are present obligations of the company to transfer economic resources arising from past transactions. For example, they include accounts payable for credit purchases, advances received from customers before goods are delivered, and bonds payable issued to raise funds. Equity is calculated by taking away liabilities from assets. Equity includes paid-in capital, which is the total par value of shares issued by the company, and capital surplus arising from capital transactions. As such, the statement of financial position shows the company's financial structure at a specific point in time.



In contrast, the income statement reflects a company's operating performance over a specific period by reporting revenues and expenses. Revenues represent increases in assets or decreases in liabilities that result in an increase in equity, whereas expenses represent decreases in assets or increases in liabilities that reduce equity.

The cash flow statement illustrates cash inflows and outflows from operating, investing, and financing activities, and is used to assess a company's actual cash-generating ability.

$$\text{Revenues} - \text{Expenses} = \text{Net Income}$$

The Statement of Changes in Equity provides details on the size and composition of equity, as well as changes due to events like capital increases or dividends. Finally, the Notes clarify accounting policies, provide detailed breakdowns, and identify potential risks, all of which are essential for a comprehensive understanding of the financial statements.

These statements are accessible through the DART (<https://dart.fss.or.kr/>). They are issued periodically: annual (one year), semi-annual (six months), and quarterly (three months). These reports contain critical information such as changes in capital, company and business overview, risk management, major contracts, bonds, and corporate tax expenses. By analyzing these documents, investors can gauge a company's financial soundness and evaluate its performance. This enables them to formulate investment strategies by comparing the company with other companies in similar industries.

Key Investment Indicators

Several investment indicators, derived from financial statements, are used to analyze companies. First, the Price to Earnings Ratio (PER) is calculated by dividing a company's current stock price by its earnings per share (EPS). It indicates how many times the stock price is compared to the EPS. A higher PER relative to similar industries may suggest the company is overvalued. On the other hand, a lower PER could indicate an undervalued stock or a company in its early stages with high R&D expenditures, requiring a comprehensive analysis.

$$\text{PER} = \frac{\text{Current Stock Price}}{\text{Earnings Per Share(EPS)}}$$

Next, the Price-to-Book Ratio (PBR) is calculated by dividing the market price per share dividing by the book value per share.

Book value per share represents the amount of a company's net assets available to common shareholders after converting the company's assets into their book value as recorded on the financial statements, and after subtracting preferred stock (shares with limited voting rights) and all liabilities, by the number of outstanding common shares (shares with voting rights).



PBR shows how many times a stock trades relative to its book value per share. A PBR of 1 means the stock price equals its book value; below 1 suggests undervaluation, and above suggests overvaluation. However, PBR alone does not guarantee a company's financial soundness, as book value may not reflect the true market value of assets. In short, PBR is primarily an indicator used to evaluate stock prices based on a company's financial health, while PER is used to assess stock prices in relation to profitability.

$$\text{PBR} = \frac{\text{Market Price Per Share}}{\text{Book Value Per Share}}$$

A company's total capital consists of equity, which is funds raised from issuing shares, and debt, which is funds borrowed from external sources.

ROE represents how effectively management uses shareholders' capital to generate profits, calculated by dividing net income from the income statement by total equity. ROE indicates how effectively a company uses its own capital to earn profit. A high ROE tends to be associated with higher stock prices. ROE is a key financial ratio used to measure overall business performance. Conversely, a low ROE may indicate poor company performance or a struggling industry.

$$\text{ROE} = \frac{\text{Net Income}}{\text{Total Equity}}$$

Company Analysis

Let's analyze which companies might be a better investment through financial statements as a hypothetical company.

	A	B	C
Stock price (KRW)	50,000	80,000	30,000
Earnings per share (KRW)	5,000	2,000	4,000
Earnings per share (KRW)	5,000	2,000	4,000
Net income (KRW 100 million)	5,000	2,500	3,000
Equity capital (KRW 100 million)	25,000	50,000	40,000



From these figures, we can calculate PER, PBR, and ROE as follows:

	A	B	C
PER(Price to Earnings Ratio)	10	40	7.5
PBR(Price-To-Book Ratio)	2.0	1.0	0.5
ROE(Return On Equity)	0.2	0.05	0.075

Assuming companies A, B, C belong to the same industry. Company B has the highest PER, suggesting its stock price is high relative to its EPS, potentially indicating overvaluation. Company C has the lowest PER, and PBR, which might suggest it is undervalued or in an early investment stage with high R&D expenditures, requiring a thorough analysis of its financial statements. Assuming no errors in the financial statements, C appears undervalued based on its book value, while A is overvalued, and B's stock price equals its book value.

Company A boasts the highest ROE, indicating the most efficient use of shareholder capital to generate profits. In this case, investors may choose the company according to their personal inclinations. Those who prefer undervalued companies might consider Company C, as its low PER and PBR suggest it is undervalued relative to its EPS and book value. However, its lower profit growth compared to A necessitates a review of its operational performance and profitability. Aggressive investors seeking growth stocks might opt for Company B, which has the highest PER. This reflects market expectations for future growth despite a high stock price relative to current EPS. Therefore, investors should assess current performance and future growth potential when deciding whether to invest. Finally, Conservative investors seeking stability might choose Company A for its high ROE, reflecting consistent profitability. Thus, investors use these indicators to determine which companies to invest in and to what extent.

Other Considerations for Investment

In addition to these investment indicators, you can also refer to the ratio that shows a company's financial soundness and liquidity. For example, a high current ratio indicates sufficient ability to repay current liabilities. A high quick ratio indicates that a company has sufficient cash and cash equivalents, reducing its short-term financial risk. A high net working capital ratio suggests current assets exceed current liabilities, ensuring stable funding for operations. A low debt ratio indicates less reliance on borrowing and stable capital utilization. Lastly, a low non-current ratio indicates that current assets account for a larger proportion than long-term assets.

Warren Buffett advised to invest long-term in companies with intrinsic value higher than their market price and to invest in what you know. Ultimately, the most crucial things are a company's future growth potential and inherent capabilities. Additionally, assessing whether a stock is overvalued, financial soundness, cash management and debts levels will significantly aid investment decisions.

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Short-Form Content

By Song Chae-bin, Cub Reporter,

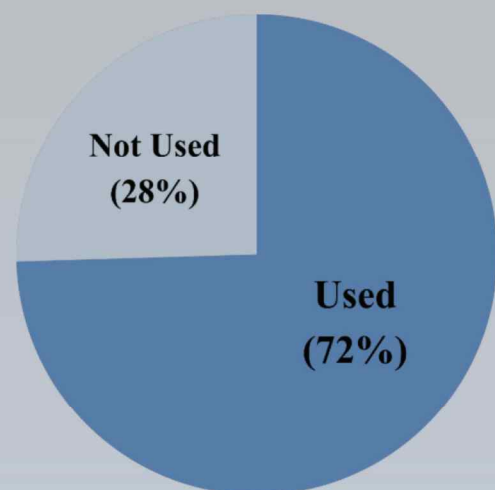
Freshman of Division of Humanities, Social Sciences, Business, and Economics

We live in an age where content is constantly overflowing. Among the various types of content encountered in daily life, short-form content best reflects the clearest example of the rapidly changing trend. Short-form means a video form that is short and intuitive. Platforms such as Instagram, YouTube, and TikTok offer this type of video.

What is Short-Form Content?

Main characteristics of short-form content include delivering key messages quickly, allowing easy participation due to convenient production and consumption, and boosting viewers' concentration compared to long videos or text-based media. It is widely used in advertising, marketing, and public campaigns.

According to the [2024 Online Video Service Usage Behavior Survey] by the Korea Creative Content Agency, 72 percent of the respondents said they had used short-form content within the last year. It shows that most Korean online video users consume short-form content. At the same time, it is implied that short-form content has become a major content form beyond a passing trend.



▲ Experience Using Short-Form Content

Convenient by Short-Form Content, Steal the Depth of Thought

As such, short-form content has become one of the forms of everyday content, but the impact of our consumption habits on us is by no means light. The fast pace of short-form content makes it difficult for our brains to concentrate in one place. In addition, resistance to these short stimuli leads to greater stimulation, which leads to loss of interest in daily life.

The Dysfunction of Short-Form Content, Spreading Throughout Society

Some video producers add incendiary content or fake information in their products to attract viewers' attention. As a result, unverified content and smear productions are being indiscriminately produced and distributed. While their unethical behavior may be effective in attracting viewers' attention in the short term, it ultimately only contributes to promoting social division.

The possibility of exposing violent or lewd content to a large number of unspecified users cannot be excluded. If you encounter provocative content, the algorithm recommends similar things steadily for the user. Companies that provide such content argue that there is no problem because these are for adults. However, due to the nature of being accessible to anyone, the possibility of exposing images harmful to minors cannot be excluded. As can be seen from the example presented above, short-form content provision platforms have not prepared an active plan to solve those problems. In addition, regulations on such content are not implemented in most countries, and the lack of laws to be punished criminally is the cause of amplifying the problem.

Era of Short-Form: How Can I Protect Myself?

'Digital detox' refers to temporarily avoiding digital devices to reduce stress and improve quality of life. Let's apply the same method when looking at short-form content. Instead of spending too much leisure time on these platforms, it is recommended to limit usage to specific times and practice other hobbies such as exercise, walking, or reading.

Problem of Short-Form: Our Countermeasures

However, there is a limit to solving these with only individual efforts. Furthermore, regulations are failing to keep pace with the rapid spread of short-form content. The nation should impose regulations on short-form content platforms and legislate against hazardous content creators.

It is hard to deny that short-form content has significant advantages, such as rapid delivery of information and easy accessibility. Even if we only depend on its convenience, it becomes difficult to think deeply, and such problems are not only personal issues but also more widespread. In the end, the key lies not in how much we consume, but in how we consume it. In a short-form era that requires deep thinking and careful interpretation of information, we must protect ourselves.



AI IS CHANGING THE FIELD OF CREATIVITY

By Choi Yong-il, Reporter, Junior of Chemical and Biological Engineering

In recent years, AI has moved beyond just a tool and has stepped onto the stage of creativity. AI now generates pictures, composes music, and even creates novels and poems. This shift has challenged the long-held belief that art is something only humans can make. As the boundaries between technology and art, and between humans and machines, become increasingly blurred, new opportunities and debates are emerging.

AI in Art: From Tool to Partner

Generative AI has brought dramatic changes to the art world. A notable example emerged in 2022, when “Space Opera Theater”, created using the AI program “MidJourney”, won first place in the digital art category at the Colorado State Fair in the U.S. This event sparked a major question: “Can an AI-created work be regarded on the same level as human art?” Following the controversy, the fair began requiring artists to disclose the use of AI, showing that artistic standards may need to adapt alongside technology.

This incident also revealed a deeper concern: audiences often cannot tell whether a piece was created by a person or a machine. As AI tools become more sophisticated, the boundary between human intention and algorithmic output grows increasingly unclear. For many artists, this uncertainty creates both excitement and anxiety excitement about new creative possibilities, and anxiety that their own work may be overshadowed or undervalued. As a result, the debate is shifting from simply “What is AI art?” to “How do we preserve the meaning of artistic effort in an age of automation?”

Legal and Ethical Questions

The first issue is authorship. In 2018, Stephen Thaler asked the U.S. Copyright Office to register an image made by his AI. The office refused, stating that copyright requires human creativity. Thaler went to court, but in 2023, both the U.S. District Court and the U.S. Court of Appeals also rejected his claim.

This case had big effects. As AI works gain value, questions about ownership now affect areas like film, publishing, and gaming. Some companies even try to measure how much of the work is done by humans to avoid legal trouble. This ruling is seen as a turning point in the global copyright debate.





In Korea, the Copyright Commission has similarly stated AI-generated works are usually not protected. But if humans clearly add creativity, they may qualify. This is similar to global trends. The European Union is preparing an AI Act that asks for more transparency. Japan also says AI works are usually not protected, but it is working with the industry to set rules. These actions are expected to guide future laws.

The second issue is the role of artists. Some fear AI will replace them. Others think it will give more people a chance to create. Work like making music or illustrations, which once needed skills and equipment, can now be done by anyone with AI. This opens the door to new types of art. On YouTube and TikTok, more creators are already making AI music videos and webtoons, gaining their own fans. Experts compare this to the invention of photography. People once feared it would replace painting, but later it became its own art and gave new ways of expression.

AI as a Partner, Not a Threat

The growth of AI in art does not mean the end of human creativity. Instead, AI is becoming a partner that helps with new experiments. Around the world, more projects show artists and AI working together. In Korea, more exhibitions and performances use AI, showing how art and technology are joining in a new cultural trend.

AI's influence is not just about tools. It raises basic questions about what art is. The law is still unclear, and ethical debates go on. But one thing is sure: AI is not a threat to art. It is opening new doors for creativity. When human imagination and technology meet, they can create new cultural value beyond what we once imagined.

To make the most of this change, however, society needs to rethink how it supports artists and protects their work. Clearer rules on authorship and copyright will be necessary, not to block AI, but to make sure human creativity is recognized and fairly rewarded. Schools, museums, and cultural institutions can also play a role by helping people understand how AI-made images, music, and writing are created. In this way, AI can become a partner in culture, not a replacement for the people behind it. The real question is not whether AI will replace artists, but how we choose to use it in building the future of art.

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ZERO SUGAR



By **Hong Yun-seo**, Cub Reporter, Freshman of Building and Plant Engineering

In recent years, a “zero sugar” trend has emerged in the food industry. Products labeled ‘zero sugar’, such as drinks, snacks, and candies, are now common in convenience stores and supermarkets. Zero sugar products, which replace regular sugar that raises blood glucose levels, are rapidly increasing in line with growing social concerns about diabetes. However, while these products are considered to have a positive effect on health, concerns are gradually rising that artificial sweeteners could be more harmful than sugar.



Definition of Zero Sugar

Zero sugar, also often marketed as “zero calorie,” generally means a beverage with less than 4 kcal per serving or under 20 kcal per 100 ml. Although it is called zero calorie, regulation allows the use of the name “zero calorie (zero sugar)” if it contains trace amounts below the standard level, rather than being completely calorie-free. Such foods are sweetened by using low-calorie artificial sweeteners instead of sugar.

INGREDIENTS AND EFFECTS OF ZERO SUGAR

Most zero sugar foods use low-calorie synthetic sweeteners that have a sweet taste similar to sugar but are calorie-free. As a result, it may benefit both dieters and people with diabetes. Artificial sweeteners, the main ingredient in zero sugar foods, provide a stronger sweetness than sugar even in small amounts. Many countries around the world make foods using artificial sweeteners. Although there were once claims that sugar substitutes could be carcinogenic, the European Food Safety Authority (EFSA) and the U.S. Food and Drug Administration (FDA) rejected them. However, Zero sugar products are not completely harmless to health. For example, there is an analysis that the acid content contained in a Zero Sugar drink showed a level of tooth erosion similar to that of a regular sugar drink. In addition, compared to overseas studies, domestic studies have shown that sweeteners are lacking, especially in sensory evaluation (a scientific method that analyzes quality using the five senses). Therefore, the current evaluations of Zero Sugar are still mixed.



SMART CONSUMPTION OF ZERO SUGAR

Low calorie, low sugar foods have gained popularity among consumers. Many people enjoy being able to purchase products with fewer calories. Some bloggers who share their diet experiences say that they were able to enjoy the drink without much concern by drinking zero cola. Experts and the public are divided over the safety of the rapid spread of zero-sugar foods. While research on sweeteners and direct products is working abroad, research on them is mainly focused on the development of sweetener materials in Korea, making it difficult to compare them due to the lack of related research. Compared with overseas studies, domestic research on sweeteners is still limited, making it difficult to draw firm conclusions. As a result, safety concerns are likely to persist. In this respect, it is somewhat lacking, and safety concerns are likely to continue in the future. The attitude that consumers should have is important. Consumers are advised to avoid too much dependence on zero-sugar products, drink water regularly, and limit snack consumption. In addition, if related information is actively explored and approached from a balanced perspective, smarter consumption of zero sugar food will be possible.



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Autonomous Driving Technology

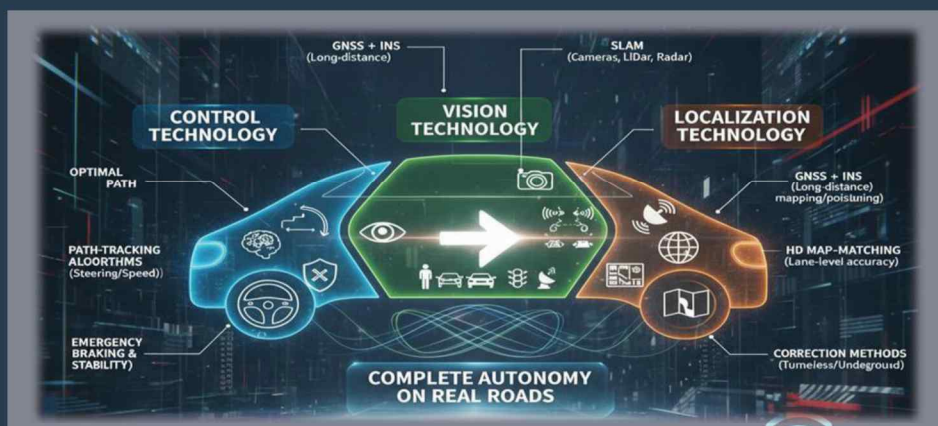


By Kim Si-yeon, Reporter, Sophomore of Electronic Engineering

A new era is approaching in which vehicles can operate without human drivers. Technologies such as Tesla's Full Self-Driving (FSD) and Google's Waymo represent crucial steps toward achieving "full autonomy." Autonomous driving is advancing in stages from Level 1 to Level 5, with the current state remaining at Levels 2–3. Level 1 refers to single-function assistance, such as steering or acceleration support. At Level 2, partial steering and acceleration assistance are possible, while Level 3 allows conditional driving without human intervention under specific circumstances. Looking ahead, Levels 4 and 5 target complete driverless driving, carrying the potential to reshape transportation systems and daily life. The advancement of autonomous vehicles largely depends on the integration of three core technologies: control, vision, and localization. This article will explore how these elements enable vehicles to drive themselves.

Technologies for Autonomous Driving

Control technology serves as the brain of autonomous driving. A vehicle must do more than simply drive straight and turn. It must determine the optimal path while considering road conditions and destinations. Path-tracking algorithms make this possible. They compare the car's current position with the designated route and then calculate the appropriate steering angle and speed. Optimal control methods ensure smoother and more stable driving while balancing efficiency and performance. Control technology also plays a vital role in emergencies. Automatic braking and stability systems work to protect passengers when sudden risks appear.



Vision technology functions as the eyes of an autonomous vehicle. Cameras, LiDAR, and radar detect pedestrians, vehicles, and traffic signals on the road. Segmentation techniques identify lanes and road boundaries. Tracking methods follow moving objects over time. With behavior prediction, the system can estimate the future actions of pedestrians and vehicles. A single sensor has limitations under difficult weather or environmental conditions. For this reason, sensor fusion, which combines data from multiple sensors, plays a critical role in achieving reliable perception.

Localization technology allows vehicles to determine their exact position on the road. GNSS, the Global Navigation Satellite System, and INS, the Inertial Navigation System, provide stability for long-distance driving, but their signals weaken in cities and tunnels. To address this limitation, SLAM, or Simultaneous Localization and Mapping, is used. The vehicle builds maps in real time and estimates its own position. HD map-matching technology refines this process to the lane level and increases driving stability. In tunnels and underground roads, correction methods maintain continuous operation. Control, vision and localization have advanced on their own, but complete autonomy can only be achieved when all three work together on real roads.

Barriers to Commercialization

Experts note that many challenges remain before autonomous vehicles can be fully commercialized. Safety and reliability must come first, and legal systems require urgent reforms. Questions about accident responsibility, insurance coverage and data use are still unresolved. In addition, infrastructure such as high-definition maps and V2X, or Vehicle-to-Everything communication, must be established. Public acceptance is another crucial factor.

Autonomous vehicles are no longer confined to science-fiction. If technological progress, legal support and social acceptance move forward in balance, the day will soon arrive when people in cities experience a world where holding the steering wheel becomes unnecessary.

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기사 작성 시 원고료 지급
부서장 승급 시 근로장학금 지급
사내 영어 스터디 지원
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모집분야

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S Y H R E S C N D T E J G P C N
 S J T K E F N N E D S L N O I O
 I S G I O F E J R L O Q I P R I
 N R E R L R S I G B O R R U C T
 T K I C T I O N A N H I E L U A
 E S E G C D B L A E C O E A M R
 G K B F Q U I I M R U D N R S O
 R N A M T Z S R S E T B I I T B
 A Z L P A P Q P E N F M G T A A
 T K X T Q T X S J L O H N Y N L
 I H I E R U T U F U A P E T C L
 O O N X Z C R E A T E T S U E O
 N O I T A M R O F N I J I E S C
 S E I T I N U T R O P P O V R A
 M A N U F A C T U R I N G T E F
 F A C I L I T I E S Z K Y V E A

1. In 2009, following the trend of _____, the university launched its first English language newspaper, the Hanbat Herald. [p.8-11]
2. Reporters gain teamwork and _____, which become valuable assets even after graduation. [p.8-11]
3. At HBNU, the Humanities and Social Sciences Convergence Talent Cultivation Project (HUSS) fosters creative and practical problem-solving skills through interdisciplinary _____. [p.12-13]
4. The team applies _____ knowledge learned in class to build real racing cars. [p.14-15]
5. MIRACLE achieved notable _____ in national competitions, including the 2021 Overall Championship. [p.14-15]
6. HBNU offers a variety of scholarship programs to support students based on their individual _____. [p.16-17]
7. Some students are unaware of scholarship _____ because they believe scholarships are only for high grades or are unsure of the requirements. [p.16-17]
8. RCL is conducting joint research and development in _____ with companies at designated sites. [p.18-19]
9. HBNU is leading this movement through its Smart Factory Center, which focuses on nurturing talent for the future of smart _____. [p.20-21]
10. At the center, state-of-the-art _____ such as the Smart Factory Testbed and the Smart In-Factory Logistics Lab are available. [p.20-21]
11. Debts are present obligations of the company to _____ economic resources arising from past transactions. [p.22-25]
12. PBR shows how many times a stock trades _____ to its book value per share. [p.22-25]
13. Among the various types of content encountered in daily life, short-form content best reflects the clearest example of the rapidly changing _____. [p.26-27]
14. In a short-form era that requires deep thinking and careful interpretation of _____, we must protect ourselves. [p.26-27]
15. The real question is not whether AI will replace artists, but how we _____ to use it in building the future of art. [p.28-29]
16. When human imagination and technology meet, they can _____ new cultural value beyond what we once imagined. [p.28-29]
17. Low calorie, low sugar foods have gained _____ among consumers. [p.30-31]
18. Autonomous driving represents a _____ in which vehicles operate without human drivers. [p.32-33]

1. What is the most interesting article in the 35th Hanbat Herald?

2. What is the most boring article in the 35th Hanbat Herald?

3. Is there anything you want to say to the Hanbat Herald?

Name :

Student ID Number :

Department :

Phone Number :

★ We will give you a small present.

The first five people who finish the puzzle can get a gift. Also if you find missing words in the Hanbat Herald, you will get a gift from us for each unique error. Please write your name and phone number on the page and bring it to the Hanbat herald office. (S2 building 4th floor).

Written by
the HANBAT
HERALD



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