

KICS Fall Conference 2019 Program

Date November 16 (Saturday), 2019

Venue Kookmin University, Seoul, Korea

Organized by

KICS
The Korean Institute of
Communications and
Information Sciences

Patrons

HaeDong Foundation for Science and Culture, **SAMSUNG** **LGU+**



KOOKMIN UNIVERSITY



KICS

The Korean Institute of
Communications and
Information Sciences



5만원대 무제한
5G 스페셜 요금제



3만원대 합리적인
5G 라이트 청소년



3만원대 실속있는
5G 라이트 시니어

차원이 다른 5G 서비스를
당신에게 딱 맞게



다양한 5G 요금제

오직 유플러스에서만

- '19.12/31까지 무제한 5G 요금제(5G슈퍼플래티넘, 5G플래티넘, 5G프리미엄, 5G스페셜) 가입한 고객에 한해 24개월간 속도 제어 없이 5G 데이터 무제한 이용 가능
- 무제한 데이터 혜택 악용하여 네트워크 품질 저해하거나, 네트워크 상황에 따라 장애발생 우려가 있는 경우, 일반 사용자 보호를 위해 데이터 속도 제어, 이용제한 차단, 해지 가능
- 부가전화(15XX, 16XX 등)는 기본제공량 300분 초과 시 과금, 국제전화는 별도 요금로 과금 음성통화량 월 3회 이상 하루 600분 또는 한달 10,000분 초과하거나 상업 목적으로 이용 시 사용량 제한

일상을 바꿉니다

U+ 5G

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KOOKMIN UNIVERSITY

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Message from the Chairs

Fall has come to the campus of Kookmin university with the beautiful autumn colors of surrounding Bukhansan National Park. I would like to invite the members of KICS (The Korean Institute of Communications and Information Science) to this fall conference for sharing the research achievements during this year as well as for giving my sincere gratitude to the members for their cooperation all through this year. Thanks to the great contribution of the KICS members, we have been able to become a model society in the Korean ICT academia and industry with our continued advancement despite all the difficulties we have faced this year. I am very happy to have a chance to share this glory with our members. 2019 has been a year of quantum leap for KICS, becoming a convergence platform where industry, academia, and government join together in the field of ICT convergence as well as communications.

The role of our members is growing important every year in the fierce technological race between countries and rapidly changing market environment. In this situation, the KICS has promoted new academic projects in the ICT convergence areas, such as the artificial intelligence, blockchain, IoT platform, energy, automobiles, bio/medical, military, media, drone/robot, and telecommunication semiconductors as well as the 5G/6G communications, by inviting new experts of the respective fields. The ICT Convergence Korea 2019, held on March, has been a magnificent ICT convergence event, arranged together with the government departments such as Ministry of Science and ICT, Ministry of Trade, Industry and Energy, Ministry of Health and Welfare, and Ministry of Land, Infrastructure, and Transport, and other 21 government affiliated agencies. In April, we have cooperated with Ministry of Science and ICT to organize the ceremony for the ICT day, in which we have explored our future direction and selected excellent researchers. As a leading ICT association, we have held a joint event with Korean Association for Broadcasting & Telecommunication Studies (KABS) and Korea Association for Telecommunication Policies (KATP) for promoting lively exchanges between academic associations. Internally, KICS has finalized the project that upgrades the website and resource center for the benefit of members. The construction of the KICS center has started this year and now is almost at the final stage, which is expected to lay the groundwork for raising the status of KICS to a higher level in the next year. We have established five new societies, which are Artificial Intelligence Society, Mobile Communications Society, Telecommunication Networks Society, Blockchain Society, and Energy Society, to create a platform for inviting experts in various fields, and expect that more societies will be founded in the future. Most of all, we have invited 1000 more members through one of this year's pivotal TFT organized for recruiting 5000 members, which also has been a driving force to make a number of foreign researchers in the overseas branches sign up for KICS. In addition, we have established the Indonesia branch on February for promoting international relationship, which has become the fifth overseas branch following the Vietnam, United States, China, and Ethiopia branches, and we plan to establish the India and Myanmar branches in 2020. And, the 10th International Conference on ICT Convergence 2019 (ICTC 2019), which was held in October of this year, was successfully completed with about 540 people from 19 countries. In addition, we

Message from the Chairs

have published the first issue of Global News Letter to create a platform for internationally publicizing the news of KICS. As a closing event this year, we are preparing to push forward with the general assembly of the 6G Forum, which was founded in April this year. KICS has been combining forces with industry, academia, research institute, and government to contribute to the development and export of CDMA and related ICT technologies in Korea, and has actively helped them to success in the domestic and overseas market throughout 3G, 4G, and 5G evolution. KICS will lead the 6G mobile communications so that Korea will again become the country with the first and best 6G mobile communications technologies after the success story of the world's first 5G mobile communications.

This year's KICS fall conference will host about 400 research papers thanks to the support and interest of our members. Choi Gyu-ha, the president of the Korea Electrotechnology Research Institute (KERI) and Lim Gi-Seong, the president of the Korea Institute of Lighting and ICT (KILT) will deliver the keynote speeches with the titles of "From Big Bang to Today's Electrical Energy World" and "Light ICT Convergence Industry Connecting Human, Good Light, and Future," respectively. Following the regular general assembly, we have prepared a variety of academic events including Society Foundation Session, Tutorial Session, Convergence Special Session, 5G Small, Medium, and Venture Business Technology and Solutions Special Session, Venture Startup Special Session, Exhibition, and New Researchers Special Session. I hope you enjoy the harmony of ginkgo and maple trees on the campus of Kookmin University.

Finally, I would like to thank the KICS domestic academic committee members and the KICS office for their hard work in preparing for this event.

November, 2019



Yeong Min Jang
KICS President



Yoan Shin
Organizing
Committee Chair



Jae-Hyun Kim
Technical Program
Committee Chair



Seung-Hoon Hwang
Technical Program
Committee Chair

Committee

General Chair Yeong Min Jang (Kookmin University)

Technical Program Committee

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Jae-Hyun Kim (Ajou University)

Seung-Hoon Hwang (Dongguk University)

Vice-Chairs

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Sang-Hyo Kim (Sungkyunkwan University)

Daeyoung Park (Inha University)

Sangheon Pack (Korea University)

Kae Won Choi (Sungkyunkwan University)

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Hyang-Won Lee (Konkuk University)

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SONG NOH (Incheon National University)

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Minjoong Rim (Dongguk University)

Seok-Ho Chang (Dankook University)

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Yoan Shin (Soongsil University)

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Wan Choi (KAIST)

Yong-Hoon Choi (Kwangwoon University)

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Cho, Sungrae (Chung-Ang University)

Ji-Woong Choi (DGIST)

Seong Gon Choi (Chungbuk National University)

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Jee Hyun Kim (Kyungpook National University)

Hyun-Woo Lee (ETRI)

Dong-Seong Kim (Kumoh National Institute of Technology)

Haewoon Nam (Hanyang University)

Sungtek Kahng (Incheon National University)

Intae Hwang (Chonnam National University)

Registration

■ Registration Fee

			Early Birds	On-Site
Conference Registration	Member	Student	72 USD	90 USD
			80,000 KRW	100,000 KRW
		Regular/Life	136 USD	154 USD
			150,000 KRW	170,000 KRW
	Non-member	Student	109 USD	127 USD
			120,000 KRW	140,000 KRW
		Regular	181 USD	199 USD
			200,000 KRW	220,000 KRW
Undergraduate Student		54 USD	72 USD	
		60,000 KRW	80,000 KRW	

* USD 1.00 = ₩1,100 (Round down less than one hundred won)

■ Registration Policy

1. To be published in the KICS Fall Conference 2019 Proceedings, a minimum of one author from each accepted paper MUST register and be a KICS member, and the paper must be presented at the conference.
2. A valid student ID is required at the registration desk to check the eligibility for student-rate registration.
3. Registrations include access to conference sessions, a program book, a luncheon (November. 16, 2019), and coffee breaks.
4. Non-refundable author registration fees must be paid prior to the early registration due (November. 4, 2019).
5. For non-author registrations, absolutely no cancellations/refunds will be accepted after the early registration due (November. 4, 2019).

Registration

■ Method of Payment

* Card

- Visa, Master, and JCB are available to use for online registration.
- Payment by credit card is available through the online procedure.
- All service charges on credit card are to be paid by registrants.
- Actual debit amount is subject to change according to the exchange rate.

* Bank Transfer

- All bank remittance charges are to be paid by registrants.
- Sender's name should be the registrant's name.

Bank Name	WOORI BANK
Account No.	192-05-027627
Swift Code	HVBKCRSE
Bank Address	1-203, Hoehyeon-dong, Jung-gu, Seoul, Korea
Beneficiary	Korea Information and Communications Society (KICS)
Beneficiary Address	#1504, 42, Seocho-daero 78-gil, Seocho-gu, Seoul 06626, Korea
Beneficiary TEL	+82-2-3453-5555

■ Refund policy

If you have already registered for KICS Fall Conference 2019 and find that you are unable to attend or cancel the paper, please notify KICS Fall Conference 2019 secretariat in writing to conference@kics.or.kr to request a refund and cancel your registration. Refund will be made upon receipt of this written notice after the conference. All bank service charges are to be paid by the registrant. No cancellations/refunds will be accepted after the early registration due (November . 11, 2019).

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Post Conference

KICS Fall Conference 2019 publishes published papers at the Post-Conference of the Electronic Information Research and Information Center for sharing research information and communicating, and operates a bulletin board to enable questions and answers related to theses. (Real time and always operating)

▶ EIRIC : www.eiric.or.kr

▶ Post-Conference : www.eiric.or.kr/community/post_sel.php

Program at a Glance

Oral Session : November 16 (Saturday), 2019 / Kookmin University, Seoul, Korea									
Venue	B1F						2F		3F
Time	B101	B102	B114	B115	B116	B117	216	220	342
	1A	2A	3A	4A	5A	6A	7A	8A	9A
09:00 10:00 (⁶⁰)	Korean Paper Session	Korean Paper Session	Korean Paper Session	Korean Paper Session	Korean Paper Session	Korean Paper Session	Korean Paper Session	Special Program	Korean Paper Session
10:10 10:30 (²⁰)	Keynote Speech 1 (2F)								
10:30 10:50 (²⁰)	Keynote Speech 2 (2F)								
11:00 12:00 (⁶⁰)	Regular General Meeting								
12:00 13:30 (⁹⁰)	Lunch								
	1B	2B	3B	4B	5B	6B	7B	8B	9B
13:30 14:30 (⁶⁰)	Special Program	Special Program	Special Program		English Paper Session I	Korean Paper Session	Tutorial 1	Special Program	Korean Paper Session
14:40 15:40 (⁶⁰)				4C	5C	6C	7C		9C
				Korean Paper Session	English Paper Session II	Korean Paper Session	Tutorial 2		Korean Paper Session
15:40 16:00 (²⁰)	Coffee Break								
	1D	2D	3D	4D	5D	6D	7D	8D	9D
16:00 17:00 (⁶⁰)	Special Program	Korean Paper Session	Korean Paper Session	Korean Paper Session	English Paper Session III	Korean Paper Session	Tutorial 3	Korean Paper Session	Korean Paper Session

Program at a Glance

Poster Session : November 16 (Saturday), 2019 / Kookmin University, Seoul, Korea	
Venue	1F (Lobby)
Time	
09:00 ~ 10:00 (1h)	10A
10:10 ~ 10:30 (20m)	Keynote Speech 1 (2F)
10:30 ~ 10:50 (20m)	Keynote Speech 2 (2F)
11:00 ~ 12:00 (1h)	Regular General Meeting
12:00 ~ 13:30 (1h30m)	Lunch
13:30 ~ 14:30 (1h)	10B
14:40 ~ 15:40 (1h)	10C
15:40 ~ 16:00 (20m)	Coffee Break
16:00 ~ 17:00 (1h)	10D

Oral Sessions

November 16 (Saturday), 2019

5B English Paper Session 1

Chair: IICKHO SONG (KAIST)

Date: November 16 (Saturday) / 13:30~14:30, B116

- 5B-1 **Performance Comparison of eBPF/XDP Packet Filtering for Linux Firewall in Hypervisor-virtualized Machines**
YoungEun Choe, Jun-Sik Shin, JongWon Kim(Gwangju Institute of Science and Technology)
- 5B-2 **A DCP-based Testbed with QoS Model for Satellite Mesh Networks**
Yifei Sun, Jinyeong Kang, Inwhee Joe(Hanyang University)
- 5B-3 **SOC prediction based on Navigation Path for Actual Electric Vehicle Application**
Angela Caliwag, Wansu Lim(Kumoh National Institute of Technology)
- 5B-4 **Estimation of State-of-Power for Li-ion Battery**
Kumbayoni Lalu Muh, Angela C. Caliwag, Wansu Lim(Kumoh National Institute of Technology)
- 5B-5 **Analysis of Chinese Remainder Theorem Moduli for Image Compression**
Ijaz Ahmad,Seokjoo Shin(Chosun University)
- 5B-6 **Data Acquisition of X-Plane's Aircraft Through Matlab for Neural Network based Identification System**
Benyamin Kusumoputro, Muhammad Fathi Fadlian(Universitas Indonesia)
- 5B-7 **Lightweight, Data Authentication Algorithm for Satellite Application**
Abid Murtaza, Syed Jahanzeb Hussain Pirzada, Tongge Xu, Jianwei Liu(Beihang University)
- 5B-8 **Design of Portable Energy Storage Control System with LoRa-Based Communication**
Habib Prabandoko, Raihan Kamil, Hadi Rudiya, Muhammad Luthfi and Chairul Hudaya(Universitas Indonesia)

5C English Paper Session 2

Chair : Bang Chul Jung(Chungnam National University)

Date: November 16 (Saturday) / 14:40~15:40, B116

- 5C-1 **Track-based Random Access with Fairness for Wireless Powered Communication Networks**
Xiaowa Yong,Inwhee Joe(Hanyang University)
- 5C-2 **Hunger marketing and Blockchain Technology: Applications in Wireless Spectrum Management**
Njoku Judith Nkechinyere, Manuel Eugenio Morocho-Cayamcela, Wansu Lim(Kumoh National Institute of Technology)
- 5C-3 **Proposed cost function using wireless propagation for self-organizing networks**
Manuel Eugenio Morocho Cayamcela, Wansu Lim(Kumoh National Institute of Technology)
- 5C-4 **Implementation of BPSK Modulation in Magnetic Induction Communication**
ZHOU WENTAO ,Yoan Shin(Soongsil University)
- 5C-5 **Survey on the Internet of Underground Things**
Mariam Ishtiaq,*Seung-Hoon Hwang(Dongguk University)
- 5C-6 **Survey on co-existence of 5G and satellite earth station in C-band**
Shu-Zhi Liu and Seung-Hoon Hwang(Dongguk University)
- 5C-7 **Chained Quantum Zeno Superdense Coding**
Fakhar Zaman, Hyundong Shin(KyungHee University)

Oral Sessions

November 16 (Saturday), 2019

5D English Paper Session 3

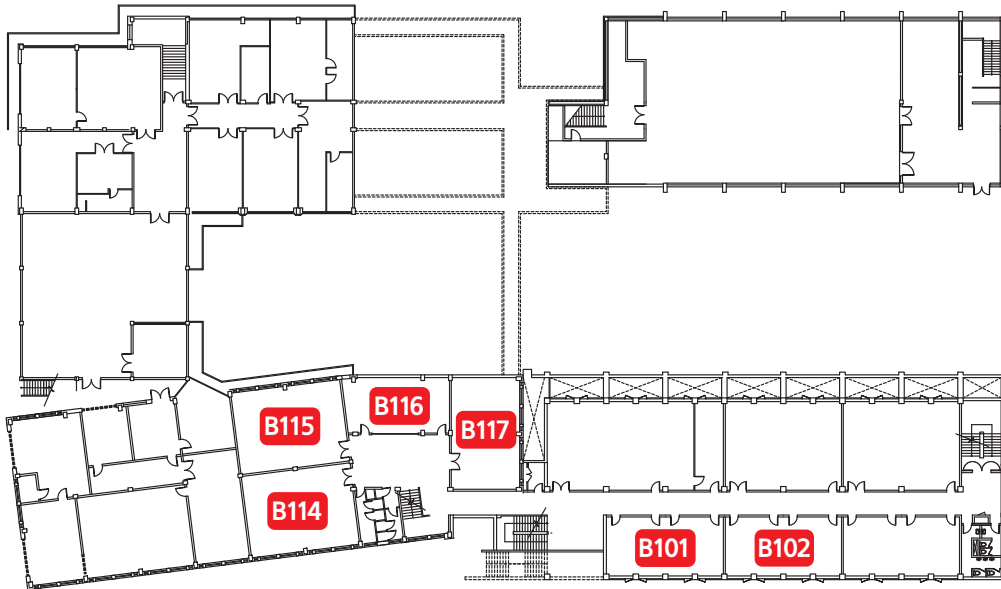
Chair: Seung-Hoon Hwang(Dongguk University)

Date: November 16 (Saturday) / 16:00~17:00, B116

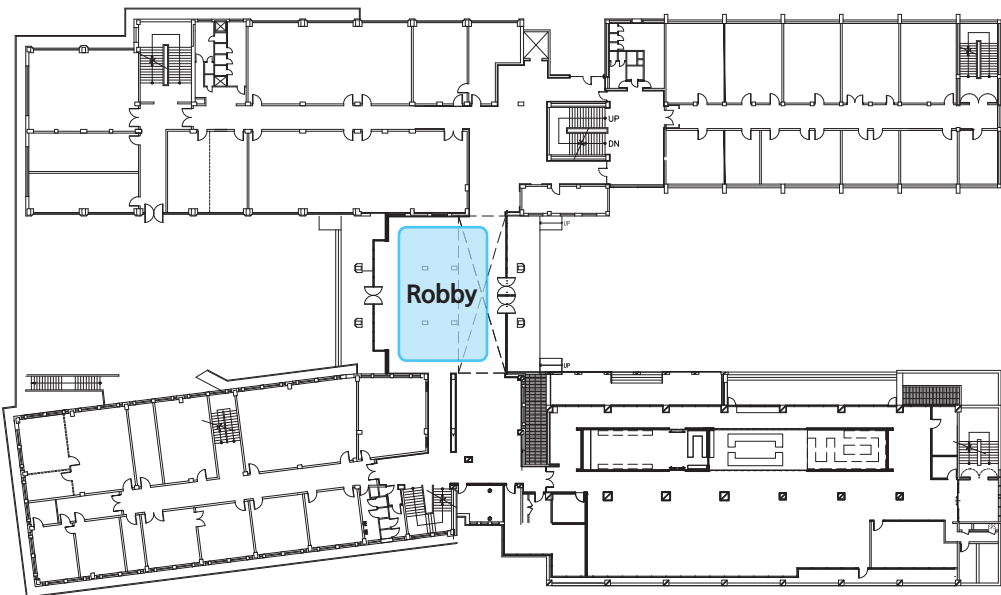
- 5D-1 Dimensional Analysis of Bipartite Qudits for Mixed-State Metrology**
Uman Khalid, Junaid ur Rehman and Hyundong Shin(KyungHee University)
- 5D-2 General Polygamy Relation of Renyi- α Entanglement for Tripartite Systems**
Awais Khan, Junaid ur Rehman and Hyundong Shin(KyungHee University)
- 5D-3 Characterization of Multiqubit-State Entanglement**
Ahmad Farooq, Hyundong Shin and Junaid ur Rehman(KyungHee University)
- 5D-4 QLST - MAC: Q Learning Based Spatial -Temporal MAC Scheduling for Underwater Acoustic Sensor Networks**
Faisal Ahmed and Ho-Shin Cho(Kyungpook National University)
- 5D-5 Delay-aware Computation Offloading Based-on Task Segmentation for IIoT System**
Godwin Tunze, Gaspard Gashema, Jae-Min Lee and Dong Seong Kim(Kumoh National Institute of Technology)
- 5D-6 Path Reliability Analysis for RIP and EIGRP Protocols in Industrial WAN**
Ann Janeth Garcia, Sanjay Bhardwaj, Jae Min Lee and Dong Seong Kim(Kumoh National Institute of Technology)
- 5D-7 Throughput Evaluation of WiMAX using OPNET Mobile and Satellite Subnets for IWSNs**
Dong Seong Kim(Kumoh National Institute of Technology)

Session Room Location

Engineering Building, Kookmin University B1F



Engineering Building, Kookmin University 1F

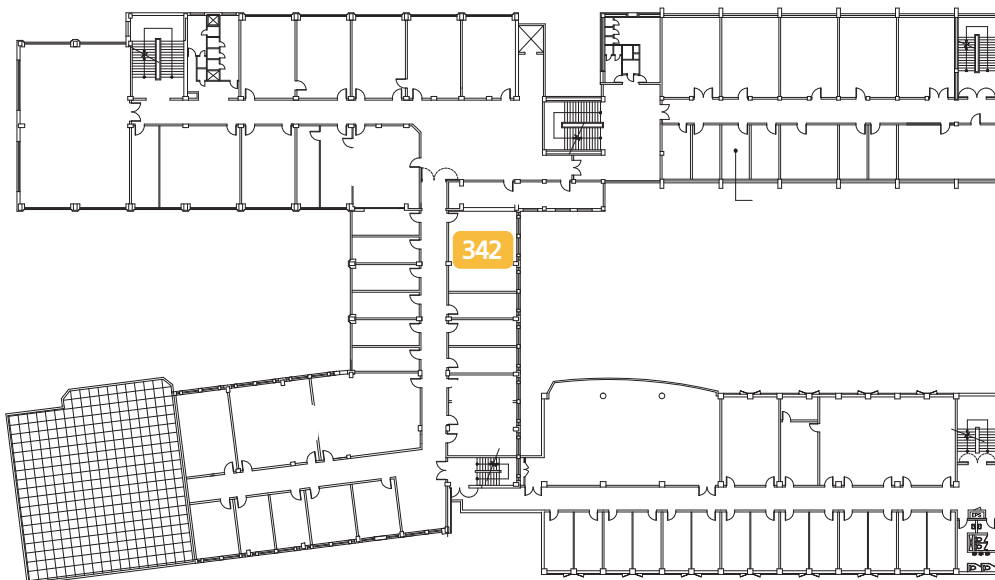


Session Room Location

Engineering Building, Kookmin University 2F

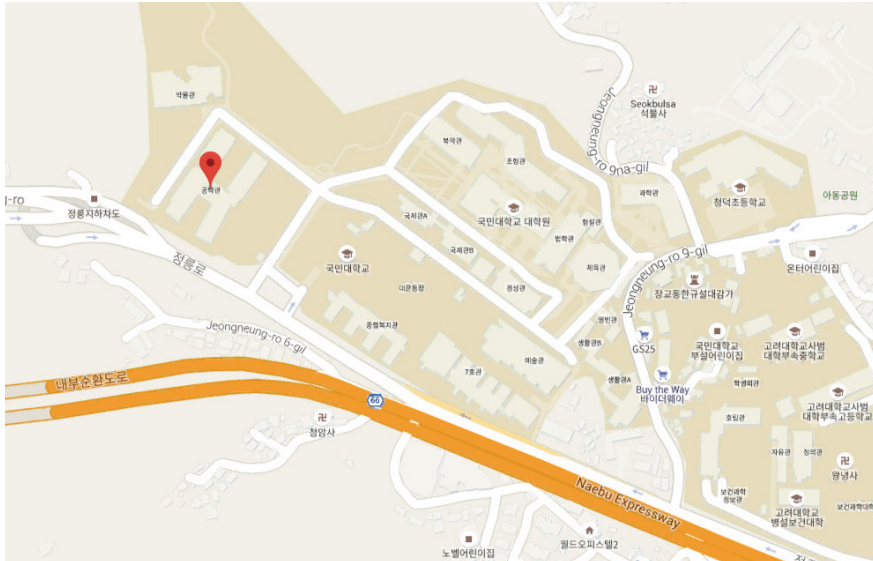


Engineering Building, Kookmin University 3F



Conference Venue : Engineering Building, Kookmin University

URL: <https://english.kookmin.ac.kr/>

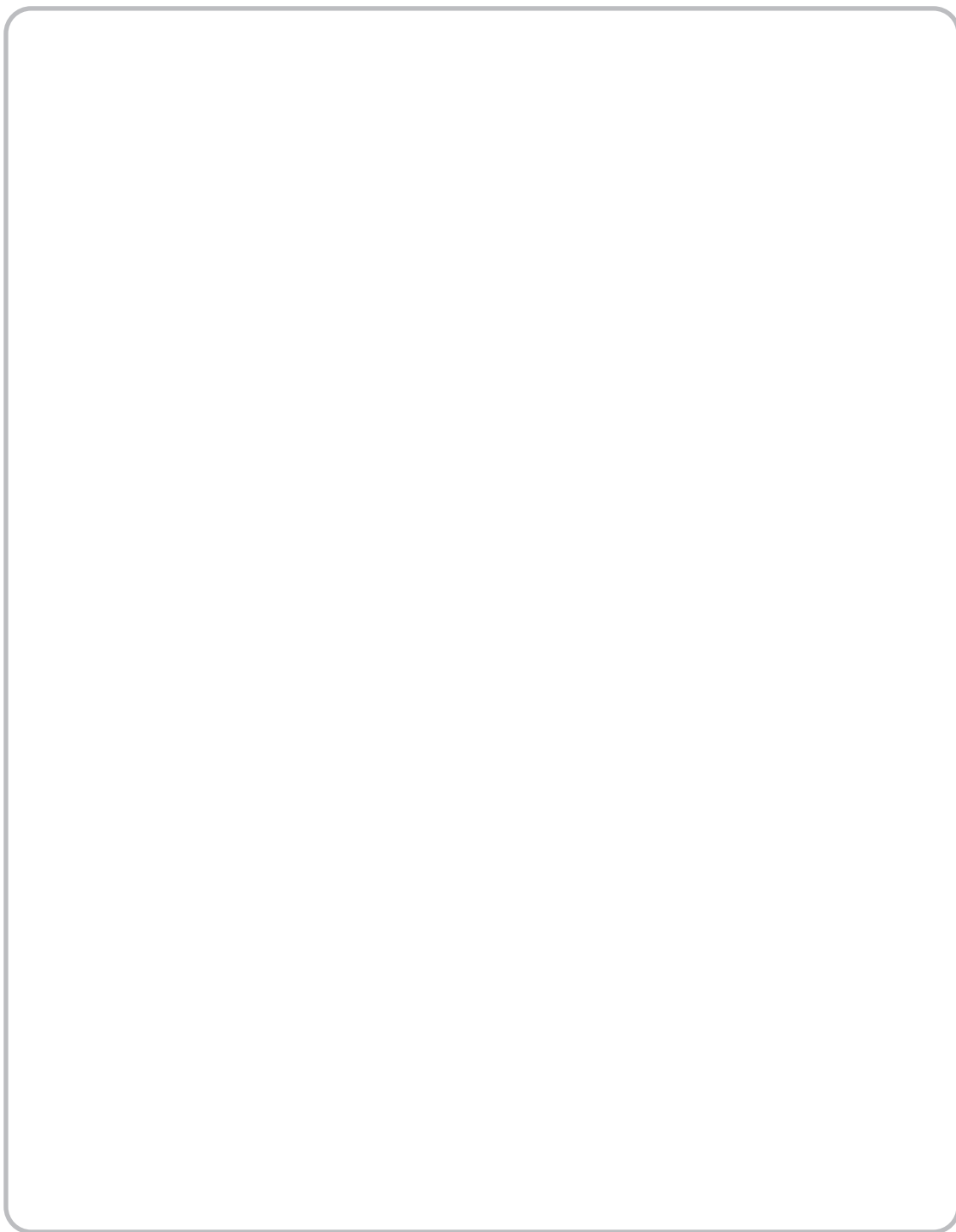


Campus Map

- Address: KOOKMIN UNIVERSITY, 77 JEONGNEUNG-RO, SEONGBUK-GU, SEOUL, 02707, KOREA
- URL: <https://english.kookmin.ac.kr/visit/map>



MEMO



SAMSUNG

전 세계에서 가장 빠른 대한민국 이동통신 시장,
늘 삼성전자가 함께 했습니다.

이제는 5G 입니다.

