

CURRICULUM VITAE

Jongtae Lee · 이종태



Personal Information			
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Education			
Period	Degree	Institution	Department and Details
Mar. 2025-Present	Doctor of Philosophy (Ph.D.)	Ajou University	Department of Artificial Intelligence Convergence Network Advisor: Prof. Jae-Hyun Kim
Mar. 2023-Feb. 2025	Master of Science (M.S.)	Ajou University	Department of Artificial Intelligence Convergence Network Thesis: Orbital Information and Distance based Conditional Handover in LEO-based Non-terrestrial Network
Mar. 2016-Feb. 2023	Bachelor of Science (B.S.)	Hannam University	Department of Computer Engineering

Research Record Summary						
First-author publications	Co-author publications	Patent records	3GPP contributions	Software copyrights	Research projects	Honors and awards
11	28	23	4	3	15	6

1. First-author Publications

11 total records

1. [\[International Journal\] \[SCIE\] 2026](#) Jongtae Lee, Yujeong Ahn, and Jae-Hyun Kim, "Timer-Synchronized RACH-less Conditional Handover for Resource-Efficient LEO Non-Terrestrial Networks," IEEE Wireless Communications Letters (IF: 5.1; mrnIF: 75.82), Vol. 15, pp. 3936-3940, doi: 10.1109/LWC.2026.3710904, Jul. 2026.
2. [\[International Journal\] \[SCIE\] 2026](#) Jongtae Lee and Jae-Hyun Kim, "A Geodesic Distance-based Conditional Handover Strategy for LEO Satellite-based Non-Terrestrial Networks," IEEE Transactions on Vehicular Technology (IF: 7.5; mrnIF: 89.13), Early Access, Mar. 2026.
3. [\[International Conference\] 2026](#) Jongtae Lee, Yujeong Ahn, and Jae-Hyun Kim, "Geometry-Aware Time-Window Conditional Handover for Non-Terrestrial Networks," IEEE CCNC Workshop on Cooperative Multi-orbit Platform for Accessible Satellite Communication System (COMPASS), Las Vegas, USA, Jan. 9-12, 2026.
4. [\[International Conference\] 2025](#) Jongtae Lee, Yujeong Ahn, and Jae-Hyun Kim, "Mobility Aware Timer-based Conditional Handover for LEO Satellite Networks," IEEE APWCS 2025, Tokyo, Japan, Aug. 2025.
5. [\[International Conference\] 2024](#) Jongtae Lee, Won-Jae Lee, and Jae-Hyun Kim, "Enhancement of RACH-less CHO in LEO Satellite Communication Systems," in Proc. KICS ICTC 2024, Jeju, Republic of Korea, Oct. 2024.
6. [\[International Conference\] 2024](#) Jongtae Lee, Yujeong Ahn, Jaeyeol Lee, Won-Jae Lee, and Jae-Hyun Kim, "WIP: Analysis of Distance-based Handover Parameters in LEO Satellite Communications," in Proc. IEEE ICMIC 2024, Kuala Lumpur, Malaysia, Aug. 2024.
7. [\[Domestic Conference\] 2024](#) Jongtae Lee, Won-Jae Lee, and Jae-Hyun Kim, "Performance Analysis of Low-Earth Orbit Satellite Handover Mechanism to Reduce Signaling Overhead (시그널링 오버헤드 감소를 위한 저궤도 위성 핸드오버 성능분석)," in Proc. JCCI 2024, Busan, Republic of Korea, Apr. 2024.
8. [\[Domestic Conference\] 2024](#) Jongtae Lee, Won-Jae Lee, and Jae-Hyun Kim, "Performance Analysis of Conditional RACH-less Handover in Low Earth Orbit Satellite Networks (저궤도 위성 조건부 RACHless 핸드오버 성능 분석)," in Proc. KIEES Winter Conference 2024, Jeju, Republic of Korea, Feb. 2024.
9. [\[International Conference\] 2023](#) Jongtae Lee, Won-Jae Lee, and Jae-Hyun Kim, "Performance Evaluation of Location-based Conditional Handover Scheme using LEO Satellites," in Proc. KICS ICTC 2023, Jeju, Republic of Korea, Oct. 2023.
10. [\[Domestic Conference\] 2023](#) Jongtae Lee, Jina Yu, Won-Jae Lee, and Jae-Hyun Kim, "Performance Analysis of Distance-based Conditional Handover in LEO Satellite Communication System (저궤도 위성통신 시스템에서 거리 기반 조건부 핸드오버 성능 분석)," in Proc. KICS Summer Conference, Jeju, Republic of Korea, Jun. 2023.
11. [\[Domestic Conference\] 2023](#) Jongtae Lee, Sangmin Han, Jaeyeol Lee, Jina Yu, and Jae-Hyun Kim, "Analysis of Constellation Type for LEO Satellite Network Service in Korea (국내 위성통신망 설계를 위한 저궤도 군집 위성 유형 분석)," in Proc. KICS Winter Conference, Yongpyeong, Republic of Korea, Feb. 2023.

2. Co-author Publications

28 total records

1. [\[International Conference\] 2026](#) Habeen Oh, Jongtae Lee, and Jae-Hyun Kim, "Residual Serving Time-Based Conditional Handover for Moving Beam LEO Non-Terrestrial Networks," in Proc. APWCS 2026, accepted, Jun. 2026.
2. [\[International Conference\] 2026](#) Jimin Lee, Jongtae Lee, and Jae-Hyun Kim, "Resource-Efficient Group Handover for Disaggregated gNB-Based Non-Terrestrial Networks," in Proc. APWCS 2026, accepted, Jun. 2026.
3. [\[Domestic Conference\] 2026](#) Jimin Lee, Jongtae Lee, and Jae-Hyun Kim, "Delay-Compensated Handover via Offset Control in Disaggregated LEO-based Non-Terrestrial Network (저궤도 위성 분산형 gNB 구조에서 오프셋 기반 지연 보상 핸드오버 기법)," in Proc. KICS Summer Conference 2026.
4. [\[International Conference\] 2025](#) Yujeong Ahn, Jongtae Lee, and Jae-Hyun Kim, "Service Link Timing Advance Estimation Method in a LEO Satellite Communication Environment," in Proc. CTCon 2025, Kumamoto, Japan, Dec. 21-24, 2025.
5. [\[International Conference\] 2025](#) Yujeong Ahn, Jongtae Lee, and Jae-Hyun Kim, "Performance Analysis of Service Link Timing Advance Estimation in a LEO Satellite Communication Environment," in Proc. ICSANE 2025, Suwon, Korea, Nov. 13-15, 2025.
6. [\[International Conference\] 2025](#) Habeen Oh, Minsik Kim, Jongtae Lee, and Jae-Hyun Kim, "A RACH-less Handover Algorithm for Reducing Handover MIT in NTN," in Proc. ICSANE 2025, Suwon, Korea, Nov. 13-15, 2025.
7. [\[International Conference\] 2025](#) Jung-Hoon Lee, Tae-Yoon Kim, Jongtae Lee, Minsik Kim, Yujeong Ahn, Habeen Oh, and Jae-Hyun Kim, "Deep Learning-Based SAR Super-Resolution for Accurate Water Body Mapping," in Proc. ICTC 2025, Jeju, Korea, Oct. 15-17, 2025.
8. [\[Domestic Conference\] 2025](#) Sol Park, Jisub Lim, Seongwoo Cho, Jongtae Lee, and Jae-Hyun Kim, "RNA 3D structure prediction model using RibonanzaNet and IPA (RibonanzaNet과 IPA를 활용한 RNA 3D 구조 예측 모델)," in Proc. KICS Fall Conference, Gyeongju, Republic of Korea, Oct. 2025.
9. [\[Domestic Conference\] 2025](#) Gayeon Cho, Jongtae Lee, and Jae-Hyun Kim, "LSTM-Based Cell Dwell Time Prediction for Handover in High-Speed Aircraft Systems (고속 항공기 핸드오버를 위한 LSTM 모델 기반 셀 체류 시간 예측 기법)," in Proc. KIEES Summer Conference 2025, Pyeongchang, Republic of Korea, Aug. 2025.

10. [Domestic Conference] 2025 Habeen Oh, Minsik Kim, Jongtae Lee, and Jae-Hyun Kim, "Performance Analysis of Feeder Link Switchover Algorithms Based on Handover Measurement Criteria (핸드오버 측정 기준에 따른 Feeder Link Switchover 알고리즘 성능 분석)," in Proc. KIEES Summer Conference 2025, Pyeongchang, Republic of Korea, Aug. 2025.
11. [International Conference] 2025 Yujeong Ahn, Jongtae Lee, and Jae-Hyun Kim, "Timing Advance Estimation for LEO-based NTN with Regenerative Payloads," in Proc. IEEE APWCS 2025, Tokyo, Japan, Aug. 2025.
12. [Domestic Conference] 2025 Tae-Han Moon, Jaeyeong Lee, Jae-Yeol Lee, Yujeong Ahn, Jongtae Lee, and Jae-Hyun Kim, "CSI Performance Analysis Considering the Characteristics of Low Earth Orbit Satellites (저궤도 위성 특성에 따른 CSI 성능 분석)," in Proc. KICS Summer Conference, Jeju, Republic of Korea, Jun. 2025.
13. [Domestic Conference] 2025 Habeen Oh, Min-Sik Kim, Jaeyeol Lee, Jongtae Lee, and Jae-Hyun Kim, "Performance Analysis of Feeder Link Switchover in a Multiple Satellites-Multiple Gateway Environment (다중 위성-다중 Gateway 환경에서의 Feeder Link Switchover 성능 분석)," in Proc. JCCI 2025, Sokcho, Republic of Korea, Apr. 2025.
14. [Domestic Conference] 2025 Yujeong Ahn, Jongtae Lee, Habeen Oh, and Jae-Hyun Kim, "Analysis of Low-Earth Orbit Satellite Communication Uplink Synchronization Performance using Timing Advance Prediction (타이밍 어드밴스 예측을 통한 저궤도 위성 통신 상향 링크 동기화 성능 분석)," in Proc. KICS Winter Conference, Yongpyeong, Republic of Korea, Feb. 2025.
15. [Domestic Conference] 2025 Jaeyeong Lee, Taehan Moon, Heonwoo Chu, Jongtae Lee, and Jae-Hyun Kim, "Analysis of LEO Satellite Signal Strength Considering Monthly Weather-Based Atmospheric Attenuation (한반도 월별 기상 정보 기반 대기 감쇠를 고려한 저궤도 위성 신호 세기 분석)," in Proc. KICS Winter Conference, Yongpyeong, Republic of Korea, Feb. 2025.
16. [Domestic Conference] 2025 Habeen Oh, Jihong Park, Jongtae Lee, and Jae-Hyun Kim, "Ground Station Cooperation-Based Low Earth Orbit (LEO) Satellite Orbit Error Correction Deep-Learning Model (기지국 협력 기반 저궤도 위성 궤도 오차 보정 딥러닝 모델 설계)," in Proc. KICS Fall Conference, Gyeongju, Republic of Korea, Oct. 2025.
17. [International Conference] 2024 Yujeong Ahn, Jongtae Lee, Tae-Yoon Kim, and Jae-Hyun Kim, "Performance Evaluation of Distance-Based Handover using LSTM in LEO-based NTN," in Proc. ICTC 2024, Jeju, Korea, Oct. 2024.
18. [International Conference] 2024 Jaeyeol Lee, Won-Jae Lee, Jongtae Lee, and Jae-Hyun Kim, "Performance Analysis of Multiple High-Altitude Platform Stations According to Architecture," in Proc. ICMIC 2024, Kuala Lumpur, Malaysia, Aug. 2024.
19. [Domestic Conference] 2024 Yujeong Ahn, Jongtae Lee, and Jae-Hyun Kim, "Performance Analysis of Distance-Based Handover According to Dynamic Offset in LEO Satellite Communication System (저궤도 위성 통신 환경에서 동적 오프셋에 따른 거리 기반 핸드오버 성능 분석)," in Proc. JCCI 2024, Busan, Republic of Korea, Apr. 2024.
20. [Domestic Conference] 2024 Jihong Park, Jongtae Lee, Tae-Yoon Kim, and Jae-Hyun Kim, "Deep Learning-Based Starlink Satellite Orbit Error Correction and Communication Performance Analysis (딥러닝 기반 Starlink 위성 궤도 오차 보정 및 통신 성능 분석)," in Proc. JCCI 2024, Busan, Republic of Korea, Apr. 2024.
21. [Domestic Conference] 2024 Jihong Park, Jongtae Lee, Tae-Yoon Kim, and Jae-Hyun Kim, "Deep Learning-Based Long-Term Satellite Orbit Error Correction Model using a Single Two-Line Element Data (단일 TLE 데이터를 활용한 딥러닝 기반 장기 위성 궤도 오차 보정 모델 설계)," in Proc. KICS Winter Conference, Yongpyeong, Republic of Korea, Feb. 2024.
22. [Domestic Conference] 2024 Heonwoo Chu, Sangmin Han, Jongtae Lee, and Jae-Hyun Kim, "Polar Region Boundary Analysis with ISL Connectivity in LEO Satellite Constellation (ISL 기반 군집 저궤도 위성 모델에서 Polar Region 범위 분석)," in Proc. KICS Fall Conference, Gyeongju, Republic of Korea, Nov. 2024.
23. [Domestic Conference] 2024 Yujeong Ahn, Jongtae Lee, Jina Yu, and Jae-Hyun Kim, "Performance Analysis of Conditional Handover according to Triggering Method in LEO Satellite Communication Environment (저궤도 위성 통신 환경에서 트리거링 방식에 따른 조건부 핸드오버 성능 분석)," in Proc. KICS Fall Conference, Gyeongju, Republic of Korea, Nov. 2024.
24. [Domestic Conference] 2024 Jihwan Kim, Seungwon Yang, Dongjun Lee, Jongtae Lee, and Jae-Hyun Kim, "Analysis of Golf Swing Speed and Shaft Recommendation Algorithm using CNN (CNN을 활용한 골프 스윙 속도 분석 및 샤프트 추천 알고리즘 구상)," in Proc. KICS Fall Conference, Gyeongju, Republic of Korea, Nov. 2024.
25. [Domestic Conference] 2024 Dohyun Lee, Sunghoon Kim, Jongtae Lee, Won-Jae Lee, and Jae-Hyun Kim, "Deep Learning based Handover Decision Technique in Low-Earth Orbit Satellite Communication (저궤도 위성통신에서 딥러닝을 활용한 핸드오버 결정 기법)," in Proc. KICS Fall Conference, Gyeongju, Republic of Korea, Nov. 2024.
26. [Domestic Conference] 2024 Seungwoo Oh, Sangjun Lee, Jongtae Lee, and Jae-Hyun Kim, "Analysis of Connection Time Based on Elliptical Orbits in LEO Satellite Communication Systems (저궤도 위성 통신 시스템에서 타원궤도에 따른 연결시간 분석)," in Proc. KICS Fall Conference, Gyeongju, Republic of Korea, Nov. 2024.
27. [International Conference] 2023 Won-Jae Lee, Jongtae Lee, and Jae-Hyun Kim, "Performance Evaluation of Multi-Attribute Conditional Handover in LEO Satellite Networks," in Proc. IEEE APWCS 2023, Tainan, Taiwan, Aug. 2023.
28. [Domestic Conference] 2023 Jina Yu, Jongtae Lee, and Jae-Hyun Kim, "Conditional Handover Performance Analysis of LEO Satellite according to Timer-based Handover Triggering Method (타이머 기반 트리거링 방식에 따른 저궤도 위성의 조건부 핸드오버 성능 분석)," in Proc. JCCI 2023, Yeosu, Republic of Korea, Apr. 2023.

3. Patents

23 total records

1. [\[International Patent · US\] 2026](#) Jongtae Lee; Won-Jae Lee; Jae-Hyun Kim, "Apparatus and Method for Performing Group Handover in a Wireless Communication System (무선 통신 시스템에서 그룹 핸드오버를 수행하기 위한 장치 및 방법)," International Patent (US), Filing Date: May 28, 2026, Application No.: 19/591,350.
2. [\[International Patent · US\] 2026](#) Jongtae Lee; Jae-Hyun Kim; Jaeseung Shin; Yuseon Hwang; Sungmin Oh; Moonsik Lee; Yujeung Ahn, "Method and Apparatus for Managing UE Context Information in Non-Terrestrial Network," International Patent (US), Filing Date: Mar. 4, 2026, Application No.: 19/530,739.
3. [\[International Patent · PCT\] 2026](#) Jongtae Lee; Jae-Hyun Kim; Jaeseung Shin; Sungmin Oh, "Apparatus and Method for Managing User Equipment Context," International Patent (PCT), Filing Date: Feb. 9, 2026, Application No.: PCT/KR2026/002300.
4. [\[Domestic Patent\] 2026](#) Jongtae Lee; Jae-Hyun Kim; Jaeseung Shin; Yuseon Hwang; Sungmin Oh; Moonsik Lee; Yujeung Ahn, "Context Information Management Method for INACTIVE UEs in Non-Geostationary Regenerative Satellite Environments (비정지궤도 재생 위성환경에서 비활성화 단말의 컨텍스트 정보 운영 방법)," Korean Patent Application, Filing Date: Feb. 6, 2025, Application No.: 10-2026-0023698.
5. [\[International Patent · China\] 2025](#) Jongtae Lee; Won-Jae Lee; Jae-Hyun Kim; Tae-Yoon Kim; Jaeyeol Lee, "Apparatus and Method for Performing Connection Reestablishment in a Wireless Communication System (무선 통신 시스템에서 연결 재설정을 수행하기 위한 장치 및 방법)," International Patent (China), Filing Date: Dec. 24, 2025, Application No.: 202480043260.9.
6. [\[International Patent · US\] 2025](#) Jongtae Lee; Won-Jae Lee; Jae-Hyun Kim; Tae-Yoon Kim; Jaeyeol Lee, "Apparatus and Method for Performing Connection Reestablishment in a Wireless Communication System (무선 통신 시스템에서 연결 재설정을 수행하기 위한 장치 및 방법)," International Patent (US), Filing Date: Dec. 24, 2025, Application No.: 19/490,920.
7. [\[Domestic Patent\] 2025](#) Jongtae Lee; Jae-Hyun Kim; Jaeseung Shin; Yuseon Hwang; Sungmin Oh; Moonsik Lee; Yujeung Ahn, "Context Information Management Method for INACTIVE UEs in Non-Geostationary Regenerative Satellite Environments (비정지궤도 재생 위성환경에서 비활성화 단말의 컨텍스트 정보 운영 방법)," Korean Patent Application, Filing Date: Oct. 15, 2025, Application No.: 10-2025-0016053.
8. [\[Domestic Patent\] 2025](#) Jongtae Lee; Won-Jae Lee; Jae-Hyun Kim; Tae-Yoon Kim; Jaeyeol Lee, "Apparatus and Method for Performing Connection Reestablishment in a Wireless Communication System (무선 통신 시스템에서 연결 재설정을 수행하기 위한 장치 및 방법)," Korean Patent Application, Filing Date: Nov. 3, 2024, Application No.: 10-2025-0164060.
9. [\[International Patent · PCT\] 2025](#) Jongtae Lee; Won-Jae Lee; Jae-Hyun Kim; Tae-Yoon Kim; Jaeyeol Lee, "Apparatus and Method for Managing Interface Between Base Stations in Wireless Communication System (무선 통신 시스템에서 기지국 간 인터페이스를 관리하기 위한 장치 및 방법)," International Patent (PCT), Filing Date: Nov. 27, 2025, Application No.: PCT/KR2025/017255.
10. [\[International Patent · PCT\] 2025](#) Jongtae Lee; Won-Jae Lee; Jae-Hyun Kim; Tae-Yoon Kim; Jaeyeol Lee, "Apparatus and Method for Obtaining System Information of Neighbor Base Stations in Wireless Communication System (무선 통신 시스템에서 주변 기지국의 시스템 정보를 획득하기 위한 장치 및 방법)," International Patent (PCT), Filing Date: Nov. 27, 2025, Application No.: PCT/KR2025/017316.
11. [\[Domestic Patent\] 2025](#) Jongtae Lee; Won-Jae Lee; Jae-Hyun Kim; Tae-Yoon Kim; Jaeyeol Lee, "Apparatus and Method for Managing Interface Between Base Stations in Wireless Communication System (무선 통신 시스템에서 기지국 간 인터페이스를 관리하기 위한 장치 및 방법)," Korean Patent Application, Filing Date: Oct. 27, 2025, Application No.: 10-2025-0156672.
12. [\[Domestic Patent\] 2025](#) Jongtae Lee; Won-Jae Lee; Jae-Hyun Kim; Tae-Yoon Kim; Jaeyeol Lee, "Apparatus and Method for Obtaining System Information of Neighbor Base Stations in Wireless Communication System (무선 통신 시스템에서 주변 기지국의 시스템 정보를 획득하기 위한 장치 및 방법)," Korean Patent Application, Filing Date: Oct. 28, 2025, Application No.: 10-2025-0157498.
13. [\[Domestic Patent\] 2025](#) Jongtae Lee; Jae-Hyun Kim; Jaeseung Shin; Sungmin Oh, "Method and Apparatus for Managing INACTIVE UEs Depending on Inter-Satellite Link Status in Regenerative Payload-based Non-Terrestrial Networks (재생 중계 페이로드의 비지상 네트워크 환경에서 위성 간 링크 여부에 따른 INACTIVE 단말 관리 방법 및 장치)," Korean Patent Application, Filing Date: Apr. 2, 2025, Application No.: 10-2025-0042879 (provisional).
14. [\[Domestic Patent\] 2025](#) Jongtae Lee; Jae-Hyun Kim; Jaeseung Shin; Yuseon Hwang; Sungmin Oh; Moonsik Lee; Yujeung Ahn, "Method and Apparatus for Managing UE Context Information in Non-Terrestrial Network (비정지궤도 재생 위성환경에서 비활성화 단말의 컨텍스트 정보 운영 방법)," Korean Patent Application, Filing Date: Feb. 13, 2025, Application No.: 10-2025-0015330 (provisional).
15. [\[Domestic Patent\] 2025](#) Jongtae Lee; Jae-Hyun Kim; Jaeseung Shin; Sungmin Oh, "Method and Apparatus for Managing INACTIVE UEs Depending on Inter-Satellite Link Status in Regenerative Payload-based Non-Terrestrial Networks (재생 중계 페이로드의 비지상 네트워크 환경에서 위성 간 링크 여부에 따른 INACTIVE 단말 관리 방법 및 장치)," Korean Patent Application, Filing Date: Feb. 6, 2025, Application No.: 10-2025-0015880 (provisional).
16. [\[International Patent · PCT\] 2024](#) Jongtae Lee; Won-Jae Lee; Jae-Hyun Kim; Tae-Yoon Kim; Jaeyeol Lee, "Apparatus and Method for Performing Connection Reestablishment in a Wireless Communication System (무선 통신 시스템에서 연결 재설정을 수행하기 위한 장치 및 방법)," International Patent (PCT), Filing Date: Dec. 3, 2024, Application No.: PCT/KR2024/019019.
17. [\[Domestic Patent\] 2024](#) Jongtae Lee; Won-Jae Lee; Jae-Hyun Kim; Tae-Yoon Kim; Jaeyeol Lee, "Method and Apparatus for Inter-Base Station Information Exchange in a Wireless Communication System (무선 통신 시스템에서 기지국 간 정보 교환 방법 및 장치)," Korean Patent Application, Filing Date: Oct. 28, 2024, Application No.: 10-2024-0148839 (provisional).
18. [\[International Patent · PCT\] 2024](#) Jongtae Lee; Won-Jae Lee; Jae-Hyun Kim, "Apparatus and Method for Performing Group Handover in a Wireless Communication System (무선 통신 시스템에서 그룹 핸드오버를 수행하기 위한 장치 및 방법)," International Patent (PCT), Filing Date: Dec. 3, 2024, Application No.: PCT/KR2024/018456.

19. [\[Domestic Patent\]](#) [2025](#) Jongtae Lee; Won-Jae Lee; Jae-Hyun Kim; Tae-Yoon Kim; Jaeyeol Lee, "Apparatus and Method for Performing Connection Reestablishment in a Wireless Communication System (무선 통신 시스템에서 연결 재설정을 수행하기 위한 장치 및 방법)," Korean Patent Registration/Application, Nov. 6, 2025 (Nov. 8, 2024), No.: 10-2883089 (10-2024-0157537).
20. [\[Domestic Patent\]](#) [2025](#) Jongtae Lee; Won-Jae Lee; Jae-Hyun Kim, "Apparatus and Method for Performing Group Handover in a Wireless Communication System (무선 통신 시스템에서 그룹 핸드오버를 수행하기 위한 장치 및 방법)," Korean Patent Registration/Application, Oct. 13, 2025 (Nov. 4, 2024), No.: 10-2872148 (10-2024-0154724).
21. [\[Domestic Patent\]](#) [2024](#) Jongtae Lee; Jangmyun Kim; Youngpo Kim; Donguk Kim; Taeseok Oh; Tae-Yoon Kim; Jihong Park; Yujeung Ahn; Jae-Hyun Kim, "Method and Apparatus for Predicting Satellite Position Based on Orbital Unit Data (단위 궤도 데이터를 기초로 위성의 위치를 예측하기 위한 방법 및 장치)," Korean Patent Application, Filing Date: Jun. 12, 2024, Application No.: 10-2024-0076539.
22. [\[Domestic Patent\]](#) [2023](#) Jongtae Lee; Won-Jae Lee; Jae-Hyun Kim, "Apparatus and Method for Performing Group Handover in a Wireless Communication System (무선 통신 시스템에서 그룹 핸드오버를 수행하기 위한 장치 및 방법)," Korean Patent Application, Filing Date: Nov. 30, 2023, Application No.: 10-2023-0170921 (provisional).
23. [\[Domestic Patent\]](#) [2023](#) Jongtae Lee et al., "Safety management system for safety of worker during road construction (도로에서의 공사 중 작업자의 안전을 위한 안전 관리 시스템)," Korean Patent Registration/Application, Sep. 19, 2023 (May 18, 2021), No.: 10-2581604 (10-2022-0156322).

4. 3GPP Standard Contributions

4 total records

1. [\[3GPP Contribution\]](#) [2026](#) "Discussion on 6G RAN Higher Layer Split for NTN," 3GPP RAN3 Meeting #131, Agenda 10.4.1, TDoc: R3-260292, ETRI and Ajou Univ., Feb. 2026.
2. [\[3GPP Contribution\]](#) [2025](#) "Discussion on Hard Feeder Link Switchover," 3GPP RAN3 Meeting #128, Agenda 14.3, TDoc: R3-253573, ETRI, Huawei and Ajou Univ., May 2025.
3. [\[3GPP Contribution\]](#) [2025](#) "Discussion on Support of Inactive UE in NTN," 3GPP RAN3 Meeting #127bis, Agenda 14.3, TDoc: R3-252099, ETRI and Ajou Univ., Apr. 2025.
4. [\[3GPP Contribution\]](#) [2025](#) "Discussion on Support of Inactive UE in NTN," 3GPP RAN3 Meeting #127, Agenda 14.3, TDoc: R3-250583, ETRI and Ajou Univ., Feb. 2025.

5. Software Copyrights

3 total records

1. [\[Software Copyright\]](#) [2025](#) Jongtae Lee (Ajou University Industry-Academic Cooperation Foundation), "3GPP 표준기반 신호 및 거리기반 조건부 핸드오버 성능분석 프로그램," Korea Copyright Commission, Dec. 17, 2025, Application No.: C-2025-058173.
2. [\[Software Copyright\]](#) [2025](#) Jongtae Lee (Ajou University Industry-Academic Cooperation Foundation), "저궤도 위성 기반 RACH-less 핸드오버 성능 분석 프로그램," Korea Copyright Commission, Dec. 12, 2025, Application No.: C-2025-057086.
3. [\[Software Copyright\]](#) [2025](#) Jongtae Lee (Ajou University Industry-Academic Cooperation Foundation), "고속 이동 단말의 Dual Active Protocol Stack을 이용한 핸드오버 성능 검증 프로그램," Korea Copyright Commission, Dec. 5, 2025, Application No.: C-2025-055244.

6. Ongoing Research Projects

5 total records

1. [\[Ongoing Project\]](#) [\[Project Lead\]](#) [2026-2029](#) "(총괄/세부1) 3GPP 6G 표준 기반 저궤도 위성통신 탑재체 및 지상국 핵심기술 개발," Electronics and Telecommunications Research Institute (한국전자통신연구원), Apr. 2026-Dec. 2029.
2. [\[Ongoing Project\]](#) [\[Project Lead\]](#) [2024-2026](#) "3GPP 표준기반 저궤도 군집 위성통신 지상국 핵심기술 개발," Institute for Information & Communications Technology Planning & Evaluation (IITP), Apr. 2024-Dec. 2026.
3. [\[Ongoing Project\]](#) [\[Researcher\]](#) [2024-2029](#) "저궤도 위성통신 시스템 설계," National Research Foundation of Korea, May 2024-Apr. 2029.
4. [\[Ongoing Project\]](#) [\[Researcher\]](#) [2024-2031](#) "저궤도 위성통신 핵심 기술 기반 큐브 위성 개발," Institute for Information & Communications Technology Planning & Evaluation (IITP), Apr. 2024-Dec. 2031.
5. [\[Ongoing Project\]](#) [\[Researcher\]](#) [2020-2027](#) "BrainKorea 21 PLUS (BK21)," National Research Foundation of Korea, Sep. 2020-Aug. 2027.

7. Completed Research Projects

10 total records

1. [\[Completed Project\]](#) [\[Project Lead\]](#) 2025-2026 "저궤도위성통신체계 다부처 및 국제협력 방안 연구," Defense Acquisition Program Administration, Jul. 2025-Jan. 2026.
2. [\[Completed Project\]](#) [\[Project Lead\]](#) 2025 "3GPP 표준기반 오버헤드 절감을 위한 저궤도 위성 핸드오버 성능분석 시뮬레이터 고도화," ETRI, May-Nov. 2025.
3. [\[Completed Project\]](#) [\[Researcher\]](#) 2024-2025 "차세대 저궤도 군집위성 활용 기술의 사업화 추진을 위한 IP고도화 및 상용화," 과학기술사업화진흥원, Apr. 2024-Dec. 2025.
4. [\[Completed Project\]](#) [\[Project Lead\]](#) 2024 "3GPP 표준기반 오버헤드 절감을 위한 저궤도 위성 핸드오버 성능분석 시뮬레이터 개발," ETRI, Jun.-Nov. 2024.
5. [\[Completed Project\]](#) [\[AI & Orbit Lead\]](#) 2023 "저궤도 군집위성 설계/분석을 위한 AI 기반 시뮬레이터 개발," SK telecom, Aug.-Dec. 2023.
6. [\[Completed Project\]](#) [\[Researcher\]](#) 2023 "3GPP NTN 기반 위성간 핸드오버 성능분석 시뮬레이터 고도화," ETRI, Apr.-Nov. 2023.
7. [\[Completed Project\]](#) [\[Researcher\]](#) 2022-2025 "초고속 이동체 지원을 위한 3D-NET 핵심 기술 개발," IITP, Apr. 2022-Dec. 2025.
8. [\[Completed Project\]](#) [\[Researcher\]](#) 2021-2025 "3차원 공간 네트워크 기술 개발," IITP, Apr. 2021-Dec. 2025.
9. [\[Completed Project\]](#) [\[Researcher\]](#) 2021-2024 "K-Starlink: 동적 재구성 가능한 지능형 위성-지상 통합 네트워크 핵심 기술연구," National Research Foundation of Korea, Jun. 2021-Feb. 2024.
10. [\[Completed Project\]](#) [\[Researcher\]](#) 2018-2023 "위성정보 융합 서비스 ICT 인력 양성 연구센터: SICAS (위성정보 처리 및 융합 서비스 기술 개발)," IITP, Jun. 2018-Dec. 2023.

8. Honors and Awards

6 total records

1. [\[International Award\]](#) 2025 IEEE Seoul Section Award, Best Student Paper Bronze Award, Dec. 2025.
2. [\[International Award\]](#) 2025 IEEE Seoul Section Award, Best Student Paper Bronze Award, Dec. 2025.
3. [\[International Award\]](#) 2025 ICSANE 2025, Young Scientist Award, Nov. 2025.
4. [\[International Award\]](#) 2023 IEEE VTS Asia Pacific Wireless Communications Symposium 2023, Seoul Chapter Award, Dec. 2023.
5. [\[Domestic Award\]](#) 2023 KICS Fall Conference 2023, 학부 우수논문 장려상, Nov. 2023.
6. [\[Domestic Award\]](#) 2020 대한민국 교육부, 2020년도 학생 창업유망팀 300 경진대회 창업도전형 선정 인증서, Aug. 2020.

9. Certifications

2 total records

1. [\[Certification\]](#) Engineer Information Processing (정보처리기사). Rated National Technical Qualification, Republic of Korea · Issued by Human Resources Development Service of Korea (HRDK) · Certificate no. 21203130376X · Nov. 2021
2. [\[Certification\]](#) OPIc (오픽) - IM2 (Intermediate Mid 2). English proficiency rating · Issued by American Council on the Teaching of Foreign Languages (ACTFL) · Certificate no. 2C9707825417 · Jul. 2024

10. Other Activities

5 total records

1. [\[Other Activity\]](#) Jul. 2026 Selected in the 1st Round of the 7th CubeSat Competition. The Ajou University team was selected in the first-round competition hosted by the Korea AeroSpace Administration and organized by the Korea Aerospace Research Institute, based on the originality, feasibility, and technical excellence of its proposed CubeSat mission and system design.
2. [\[Other Activity\]](#) Oct. 2025 ADEX 2025 Seminar - KINTEX Hall 7-8. A civil-military seminar titled "Strategies for Securing a Low Earth Orbit Satellite Communication System" brought together government, military, research, and private-sector stakeholders as part of a DAPA policy research project.
3. [\[Other Activity\]](#) Sep. 2025 STANDARD ESSENTIAL PATENT - SEP Inside No. 47. KISTA featured WINNER Lab's work on next-generation satellite communication and 3GPP NTN standardization, including LEO-based 6G NTN, RRC-less handover, and standard-essential patent strategies.
4. [\[Other Activity\]](#) Feb. 2025 Space Workshop at UPC NanoSat Lab - Barcelona, Spain. Conducted Feb. 17-28 with Prof. Hyuk Park and the UPC NanoSatLab, covering PocketSat and CubeSat architecture, subsystems, applications, integration, testing, and verification.
5. [\[Other Activity\]](#) 2023 MWC 2023 Demonstration - SK Telecom. Demonstrated an AI-based LEO satellite simulator using a Starlink-like constellation and an AI-enhanced SGP4 TLE error-correction model for real-time satellite position estimation and mobility management.