

# Jae-Hyun Park

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Intelligent Radio Sensing Lab. (IRSL) | Google Scholar | Personal Homepage

## Research Interest

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Radar architecture, radar signal processing, radar + AI, and innovative sensing applications.

## Experience

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**Daegu Gyeongbuk Institute of Science and Technology (DGIST)**

Aug. 2025 –

Postdoctoral Researcher

Principal Investigator: Prof. Jae-Ho Choi

## Education

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**Pohang University of Science and Technology (POSTECH)**

Sep. 2021 – Aug. 2025

Ph.D. Candidate in Electrical Engineering

Thesis: Next-Generation Continuous-Wave Radars

Advisor: Prof. Kyung-Tae Kim

**Yeungnam University**

Mar. 2019 – Feb. 2021

M.S. in Electronic Engineering

Thesis: A Study on Short Range Continuous Wave Radar System for Precision Detection

Advisor: Prof. Jong-Ryul Yang

**Yeungnam University**

Mar. 2013 – Feb. 2019

B.S. in Electronic Engineering

## International Journal Publications

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- **Jae-Hyun Park** and K.-T. Kim, "Adaptive Model Order ESPRIT for Fast Heart Rate Estimation Using Doppler Radar," *IEEE Transactions on Instrumentation and Measurement* (Under Review), Apr 2025.
- **Jae-Hyun Park**, J.-K. Park, J.-H. Jeong, and K.-T. Kim, "Detection and Feature Extraction of Small UASs Using Adaptive Hybrid CW Radar with Hybrid Zoom FFT," *Elsevier Measurement*, doi: 10.1016/j.measurement.2025.117555, Sep 2025.
- **Jae-Hyun Park**, J.-K. Park, J.-H. Jeong, and K.-T. Kim, "Double-Conversion FMCW Radar for Extension of Maximum Unambiguous Range," *IEEE Transactions on Instrumentation and Measurement*, doi: 10.1109/TIM.2024.3470064, Sep 2024.
- J.-K. Park, **Jae-Hyun Park**, and K.-T. Kim, "MPSK-MIMO FMCW Radar-Based Indoor Multipath Recognition," *IEEE Sensors Journal*, doi: 10.1109/JSEN.2024.3430082, Jul 2024.
- J.-K. Park, **Jae-Hyun Park**, and K.-T. Kim, "Multipath Signal Mitigation for Indoor Localization Based on MIMO FMCW Radar System," *IEEE Internet of Things Journal*, doi: 10.1109/JSEN.2024.3430082, Jul 2023.
- I.-S. Lee, **Jae-Hyun Park**, and J.-R. Yang, "Detrending Technique for Denoising in CW Radar," *Sensors*, doi: 10.3390/s21196376, Sep 2021.
- **Jae-Hyun Park** and J.-R. Yang, "Multiphase Continuous-Wave Doppler Radar With Multiarc Circle Fitting Algorithm for Small Periodic Displacement Measurement," *IEEE Transactions on Microwave Theory and Techniques*, doi: 10.1109/TMTT.2020.3041264, Nov 2021.
- E. Hyun, Y. S. Jin, **Jae-Hyun Park**, and J.-R. Yang, "Machine Learning-Based Human Recognition Scheme Using a Doppler Radar Sensor for In-Vehicle Applications," *Sensors*, doi: 10.3390/s20216202, Oct 2020.
- **Jae-Hyun Park** and J.-R. Yang, "Two-tone continuous-wave Doppler radar based on envelope detection method," *Microwave and Optical Technology Letters*, doi: 10.1002/mop.32446, May 2020.

- J. Y. Sim, **Jae-Hyun Park**, and J.-R. Yang, “Vital-Signs Detector Based on Frequency-Shift Keying Radar,” *Sensors*, doi: 10.3390/s20195516, Sep 2020.
- **Jae-Hyun Park**, Y.-J. Jeong, G.-E. Lee, J.-T. Oh, and J.-R. Yang, “915-MHz Continuous-Wave Doppler Radar Sensor for Detection of Vital Signs,” *Electronics*, doi: 10.3390/electronics8050561, May 2019.
- C. H. Choi, **Jae-Hyun Park**, H. N. Lee, and J.-R. Yang, “Heartbeat detection using a Doppler radar sensor based on the scaling function of wavelet transform,” *Microwave and Optical Technology Letters*, doi: 10.1002/mop.31823, 2019.
- J. Y. Kim, **Jae-Hyun Park**, S. Y. Jang, and J.-R. Yang, “Peak Detection Algorithm for Vital Sign Detection Using Doppler Radar Sensors,” *Sensors*, doi: 10.3390/s19071575, Apr 2019.
- B.-Y. Yoo, **Jae-Hyun Park**, and J.-R. Yang, “Quasi-Circulator Using an Asymmetric Coupler for Tx Leakage Cancellation,” *Electronics*, doi: 10.3390/electronics7090173, 2018.

## International Conference Presentations

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- **Jae-Hyun Park**, J.-H. Jeong, and K.-T. Kim, “Measurement of Blink Duration Using a Continuous-Wave Radar Sensor and Continuous Wavelet Transform,” in *Proc. Int. Conf. on Sensing Technology (ICST)*, Sydney, Australia, Dec. 2024.
- **Jae-Hyun Park**, J.-Y. Sim, and J.-R. Yang, “Multi-Phase CW Doppler Radar for Measuring Small Periodic Displacement,” in *Proc. 17th European Radar Conf. (EuRAD)*, Utrecht, Netherlands, Jan. 2021.
- J. Kim, **Jae-Hyun Park**, and J.-R. Yang, “Analysis Algorithm for Vital Signal Detection Based on Doppler Radar Sensor System,” in *Proc. 6th Int. Symp. on Sensor Science (I3S)*, Kenting, Taiwan, Aug. 2018.

## Domestic Journal Publications

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- **Jae-Hyun Park**, J. Y. Kim, S. Y. Jang, H. J. Ji, J. Y. Sim, and J.-R. Yang, “Short-range radar sensor system using continuous-wave signals,” *Journal of the Korean Institute of Electromagnetic Engineering and Science*, vol. 31, no. 2, Feb. 2020, doi: 10.5515/KJKIEES.2020.31.2.143.

## Domestic Conference Presentations

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- Presented 19 papers at major Korean conferences (2017–2025), covering radar systems, signal processing, and biomedical sensing using CW/FMCW radar platforms.

## Patents

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- **Jae-Hyun Park**, K.-T. Kim, and B.-D. Lim, “Dual Mode Radar System and Target Detection and Identification Method Using the Same,” POSTECH Industry-Academic Cooperation Foundation and COBRA Co., Ltd., Korean Patent No. 10-2739977, Nov. 28, 2024.
- J.-R. Yang and **Jae-Hyun Park**, “Radar Apparatus and Method for Measuring Distance of Target Using the Same,” Yeungnam University IACF, Korean Patent Application No. 10-2020-0074278, Jun. 18, 2020.
- J.-R. Yang, **Jae-Hyun Park**, and B.-Y. Yoo, “Sensor Module Using Different Frequencies to Recognize Motion of Target Object and Driving Method of the Same,” Yeungnam University IACF, Korean Patent No. 10-2062321, Dec. 27, 2019.
- J.-R. Yang, J.-Y. Kim, **Jae-Hyun Park**, and S.-Y. Jang, “System and Method for Determining Drowsy State of Passengers,” Yeungnam University IACF, Korean Patent No. 10-1938045, Jan. 7, 2019.

## Awards and Honors

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- IEEE GRSS Seoul Chapter Chair Award, Research Achievement Competition, The Korean Institute of Electromagnetic Engineering and Science (KIEES), Korea (Aug. 2025)
- Encouragement Prize, Research Achievement Competition, POSTECH, Korea (Feb. 2025)

- Outstanding Paper Award, The Korean Institute of Electromagnetic Engineering and Science (KIEES), Korea (Aug. 2022)
- Excellent Paper Award, The Institute of Electronics and Information Engineers (IEIE), Korea (Jan. 2021)
- Best Research Award, Yeungnam University, Korea (Dec. 2020)
- Bronze Prize, X-Core Practical Research Group, Korea (Dec. 2020)
- Outstanding Paper Award, KIEES, Korea (Aug. 2018)

## Research Projects

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- InnoCore (Trust-Enhanced Mutualistic Bio-Embedded AI), **Ministry of Science and ICT (MSIT)**, South Korea, Jul. 2025 – Dec. 2029.
- Development of Intelligent Radar Platform Technology for Smart Environment Construction, **Institute for Information & communications Technology Promotion (IITP)**, South Korea, Apr. 2019 – Dec. 2026.
- Research on Analytical Modeling of Satellite SAR Electronic Warfare Simulation Environment, **Agency for Defense Development (ADD)**, South Korea, Nov. 2021 – Nov. 2023.
- Research on Target Information Fusion Technology through Correlation Analysis of Dual-Band Multifunction Radar, **Agency for Defense Development (ADD)**, South Korea, Jun. 2021 – Sep. 2023.
- Research on Large-Area Array Structure of CMOS Plasmon Detectors for Sub-Terahertz Real-Time Imaging Systems, **Institute for Information & communications Technology Promotion (IITP)**, South Korea, Jul. 2018 – Dec. 2022.
- Research on Automatic Change Detection Cueing Optimization Algorithm for Multi-Temporal Satellite SAR Images, **Agency for Defense Development (ADD)**, South Korea, Sep. 2019 – Aug. 2021.
- Research on SAR Jamming Technique Trends and Implementation Methods, **LIG Nex1**, South Korea, May 2021 – Dec. 2021.
- Analysis of Anti-Aircraft Seeker's Electronic Counter-Countermeasures Effectiveness, **LIG Nex1**, South Korea, Jan. 2021 – Dec. 2021.
- Research on Next-Generation Multistatic Radar Imaging Systems for Smart Monitoring, **Institute for Information & communications Technology Promotion (IITP)**, South Korea, Jan. 2021 – Dec. 2021.
- Development of Design and Operation Technology for Energy Cloud PHILS (Phase 1), **National Research Foundation of Korea (NRF)**, South Korea, Jun. 2019 – Feb. 2021.
- Research on High-Sensitivity Millimeter-Wave Power/Phase Difference Detection Technology Based on Energy Detection Characteristics, **National Research Foundation of Korea (NRF)**, South Korea, Mar. 2017 – Feb. 2021.
- Research on Radar Sensors and Electromagnetic Wave Characteristics for Driver and Passenger Monitoring, **Industry-Academia Cooperation Foundation**, South Korea, Jun. 2019 – May 2020.
- Research on Miniaturization Technology for High-Power Microwave Circulators, **Korea Electrotechnology Research Institute (KERI)**, South Korea, Feb. 2019 – Nov. 2019.
- Research on Phase Difference Measurement Technology for High-Power Microwave Signals Based on Power Measurement, **Korea Electrotechnology Research Institute (KERI)**, South Korea, Feb. 2018 – Nov. 2018.
- Development of a 4-Channel Radar Sensor for Object Detection, **Korea Industrial Complex Corporation (KICOX)**, South Korea, Apr. 2017 – Apr. 2018.

## References

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- **Prof. Jae-Ho Choi**  
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## Reviewer Service

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- Elsevier Measurement