

# Deokhyun Ahn

Ph.D. Candidate · Brain & Cognitive Engineering  
Korea University · KIST AI-Robotics  

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LOC Seoul, Republic of Korea  
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## 01 RESEARCH INTERESTS

*Video understanding, contextual dynamics, and efficient AI systems for social good.*

My research focuses on video understanding, contextual dynamics, and efficient AI systems for social good. Starting from sensing-based applications, including a SLAM-based smart helmet for firefighters and indoor drone trajectory tracking, I became interested in reliable real-world systems. I now study how video models can move beyond RGB and motion cues to capture contextual interactions, and recently I have focused on VLM-guided video anomaly detection for surveillance, with emphasis on target-domain transfer and efficient sampling.

• VIDEO INTELLIGENCE

• VIDEO UNDERSTANDING

• VIDEO ANOMALY DETECTION

• VIDEO ACTION RECOGNITION

## 02 EDUCATION

Mar 2023 — Present  
Seoul, KR

**Ph.D., Brain & Cognitive Engineering**  
Korea University

- Video anomaly detection with a focus on modeling human-inspired contextual understanding in video.

Aug 2015 — Feb 2020  
Seoul, KR

**M.Eng., Electronic Engineering**  
Kwangwoon University

- Thesis — *A Study on Passive Target Tracking in Three-Dimensional Indoor Environment by Using Deep Neural Network.*
- Completed 19 months of mandatory military service.

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Mar 2013 — Aug 2015  
Seoul, KR

## B.Eng., Electronic Engineering

TRANSFER

Kwangwoon University

- Transferred in Mar 2013 from National Institute for Lifelong Education, Ministry of Education — B.Eng. in Computer Engineering coursework, Mar 2011 – Feb 2013.

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### 03 RESEARCH & WORK EXPERIENCE

Jan 2023 — Present  
Seoul, KR

## Student Researcher

CURRENT

Korea Institute of Science and Technology (KIST)

Video anomaly understanding · Surveillance video · DNN

- Modeled contextual dynamics by integrating RGB appearance, motion dynamics, and scene information — enabling the model to better capture anomaly concepts through their relationships. [1] [2] [3] [4]

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Jan 2022 — Feb 2023  
Seoul, KR

## Research Intern

Korea Institute of Science and Technology (KIST)

Video anomaly understanding in surveillance videos & DNN

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Oct 2021 — Dec 2021  
Sejong, KR

## Researcher

The Korea Transport Institute

Autonomous bus development · Project coordination

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### 04 SELECTED PUBLICATIONS

[1] **D. Ahn**, et al.

*Learning Robust Representations for Few-Shot Action Recognition with Frame-Level Ambiguities.*

BMVC 2026

UNDER REVIEW

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[2] **D. Ahn**, et al.

*BUSTER: Adaptive Sampling for VLM-Guided Unsupervised Video Anomaly Detection.*

BMVC 2026

UNDER REVIEW

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[3] **D. Ahn**, et al.

*Where and What: Contextual Dynamics-Aware Anomaly Detection in Surveillance Videos.*

IEEE Transactions on Image Processing, 2025 · IF 13.7 · top 2.2% in E.E. Eng.

PUBLISHED

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- [4] D. Kim, **D. Ahn**, et al. PUBLISHED  
*A Foundational Research Framework for Real-World Abandoned Object Detection: Train-Free Baseline and a Standardized Benchmark.*  
Expert Systems with Applications, 2025 · 130658
- 
- [5] B. Zhou, **D. Ahn**, et al. PUBLISHED  
*A Passive Tracking System Based on Geometric Constraints in Adaptive Wireless Sensor Networks.*  
Sensors, 18(10), 3276, 2018
- 
- [6] **D. Ahn**, et al. PUBLISHED  
*2D Indoor Map Building Scheme Using Ultrasonic Module.*  
J. Korean Inst. Comm. and Info. Sci., 41(8), 986–994, 2016

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## 05 AWARDS & HONORS

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- Dec 2025                      **AIR Outstanding Research Award**  
KIST AI·Robotics Institute  
*In recognition of outstanding research achievements during 2025.*
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- Feb 2025                      **Excellent Paper Award — Graduate School**  
Korea University  
*For outstanding research performance and publication of an excellent paper during doctoral studies.*
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- Nov 2024                      **Outstanding Oral Presentation Award**  
KIST Academia-Research Convergence Conference  
*For the presentation “Multi-Aspect Contextual Dynamics for Anomaly Detection in Surveillance Videos.”*
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- Jul 2021                      **Division Commander's Commendation**  
Capital Mechanized Infantry Division  
*For a combat development proposal on reconnaissance drone AI improvement and AI/big-data-based acoustic detection.*

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## 06 TEACHING

Sep — Dec 2018

## Senior Capstone Project

Kwangwoon University · Instructor: Prof. Youngok Kim

- Assisted in managing and supporting the Capstone Design Project as a TA for 50+ students.

Mar — Jun 2017

## Computer Architecture

Kwangwoon University · Instructor: Prof. Youngok Kim

- Graded assignments and provided feedback for 30+ students with Q&A sessions.

### 07 TECHNICAL SKILLS

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Programming

Python

C

Java

Git

Linux

Machine Learning

PyTorch

TensorFlow

Keras

NumPy

Pandas

Matplotlib

Sensors

Ultrasonic

Beacon

RF

Wi-Fi

3-axis Accelerometer

Embedded & IoT

Raspberry Pi

Arduino