

# Changyeon Lee

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## Education

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- **Yonsei University** Seoul, Republic of Korea  
*Senior undergraduate student in Computer Science and Engineering* *Feb 2018 - Feb 2025 (Expected)*
  - Total GPA: 4.09 / 4.3
  - Absences
    - Spring 2020 (Data Scientist at HDC)
    - Fall 2020 - Spring 2022 (Military Service at Republic of Korea Air Force)
    - Spring 2024 (Visiting Research Intern at Purdue University)
- **Chungnam Science High School** Gongju-si, Chungcheongnam-do, Republic of Korea  
*School for gifted student in natural science and engineering* *Feb 2016 - Jan 2018*
  - Graduated one year early with honors.

## Work Experiences

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- **Miraflo** Kirkland, Washington, United States  
*Founding Machine Learning Engineer (Working with Aerin Kim)* *Jun 2024 - Present*
  - Developing AI-driven video editing solutions.
  - Conducted a project on efficient diffusion-generated deepfake image detection (DistilDIRE) and contributed to a survey paper on deepfake video detection.
- **IITP K-SW Square, Purdue University** West Lafayette, Indiana, United States  
*Visiting Research Intern (Advisor: Eric T. Matson)* *Mar 2024 - Jun 2024*
  - Conducted a research on a 'Counter Unmanned Aerial System (CUAS)' by integrating multiple modalities.
  - Fully sponsored by the IITP, an organization under Ministry of Science and ICT of the Republic of Korea, in collaboration with Department of Computer and Information Technology of Purdue University.
- **Computational Intelligence & Photography Lab, Yonsei University** Seoul, Republic of Korea  
*Research Intern (Advisor: Seon Joo Kim)* *Jul 2022 - Jun 2024*
  - Participated in *Deep View Project* (led by Republic of Korea government agency (ETRI)).  
Task : Space-Time Video Super Resolution (STVSR)
    - Integrated a MeMViT-inspired approach to enhance the STVSR architecture, expanding its temporal axis view to improve video processing capabilities.
  - Participated in 'Controllable Object Centric Learning' and 'Online Temporal Action Localization (On-TAL)' research.
  - Controllable Object-Centric Representation Learning
    - Conducted a downstream task analysis to demonstrate the applicability of our research contributions while accomplishing a dataset generation task for evaluating the performance of our proposed model.
    - Performed an ablation study to validate the rationale behind the architecture of our proposed model.
  - Online Temporal Action Localization
    - Reproduced a benchmark model with datasets to establish the baseline performance for real-time action localization in videos, showing the efficacy of our research model.
    - Conducted a user study employing Amazon Mechanical Turk (AMT) to evaluate the effectiveness of our proposed model for online temporal action localization.
- **Hyundai Development Company (HDC)** Seoul, Republic of Korea  
*Data Scientist* *May 2020 - Aug 2020*
  - Played a critical role in developing a machine learning model for the estimation of an adequate apartment lotting-out price by analyzing the actual transaction price data of apartments.
  - Designed a feature engineering process using XGBoost feature importance (drop-out, pick-up) and correlation analysis.
- **Data Engineering Lab, Yonsei University** Seoul, Republic of Korea  
*Research Intern* *Jul 2019 - Feb 2020*
  - Conducted an image captioning project using Transformer.

## Extracurricular Activities

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- **Google Developer Student Club (GDSC Yonsei)** Seoul, Republic of Korea  
*Sep 2024 - Jul 2025 (Expected)*  
*AI/ML Member*
- **Yonsei Artificial Intelligence Academic Club (YAI)** Seoul, Republic of Korea  
*Sep 2018 - Feb 2020 & Jul 2022 - Aug 2022*  
*Executive Member (Advisor: Seon Joo Kim)*
  - Proceeded a reinforcement learning project DQN and Soft Q-Learning algorithm through the development of personally devised game environment using Python (Deep RL)
  - Worked as a leader of Reinforcement Learning (RL) Team and conducted a study group on RL.
  - Hosted education sessions related to artificial intelligence.

## Military Service

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- **Republic of Korea Air Force (ROKAF)** Republic of Korea  
*Aug 2020 - May 2022*  
*Staff Sergeant*
  - Honorably discharged as Staff Sergeant from Republic of Korea Air Force (ROKAF).
  - Received Republic of Korea Air Force Achievement Award.

## Publications

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- **Cost-Efficient and Effective Counter Unmanned Aerial System via Visual-Acoustic Sensing**  
*Changyeon Lee\**, Dongju Yu\*, Soyeon Cho\*, Dane W. Hindsley, Halaevahu F. Patterson, Megan A. Clecak, Eric T. Matson

**IEEE International Conference on Robotic Computing (IRC) 2024**

- **DistilDIRE: A Small, Fast, Cheap and Light Diffusion Synthesized Deepfake Detection**  
*Yewon Lim\**, *Changyeon Lee\**, Aerin Kim, Oren Etzioni

**ICML 2024 Workshop on Foundation Models in the Wild**

- **The Tug-Of-War Between Deepfake Generation and Detection**  
*Hannah Lee*, *Changyeon Lee*, Kevin Farhat, Lin Qiu, Steve Geluso, Aerin Kim, Oren Etzioni

**ICML 2024 Workshop on Data-centric Machine Learning Research**

- **Towards Interpretable Controllability in Object-Centric Learning**  
*Jimwoo Kim\**, Janghyuk Choi\*, Jaehyun Kang, *Changyeon Lee*, Ho-Jin Choi, Seon Joo Kim

**CVPR 2024 Workshop on Causal and Object-Centric Representations for Robotics**

(\* denotes equal contribution)

## Scholarships & Awards

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- Highest Honors, Yonsei University (Fall 2023)
- Merit-Based Scholarship, Jung-Hun Foundation (Fall 2023, Fall 2024)
- Merit-Based Scholarship, Yonsei University (Spring 2019, Spring 2023, Fall 2023, Fall 2024)
- Honors, Yonsei University (Spring 2018, Fall 2018)

## Skills Summary

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- Languages: Korean (Native), English (Fluent)
- Programming Languages: Python, C++, Java, SQL
- Frameworks: PyTorch, Scikit-learn, SciPy, XGBoost, Pymoo
- Tools: Docker, Oracle, PostgreSQL, MySQL