Shin Dong-Yeon

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Education

Pohang University of Science and Technology (POSTECH) *Feb. 2024 - Feb. 2026*
Master of Science., Major: Electrical Engineering., Advisor: Tae-Hyun Oh Pohang, South Korea

Pohang University of Science and Technology (POSTECH) *Feb. 2019 - Feb. 2024*
Bachelor of Science., Major: Electrical Engineering., Advisor: Chulhong Kim Pohang, South Korea

Experience

POSTECH, Advanced Machine Intelligence Lab *Jan. - Feb., Jul. - Nov. 2023*
Undergraduate Research Internship; Advisor: Tae-Hyun Oh Pohang, South Korea

- Research on robust optical flow estimation against exposure change.

SAMSUNG Mobile eXperience, Communication Processor Lab *Jul. - Aug. 2022*
Undergraduate Research Internship; Advisor: Yongsang Cho Suwon, South Korea

- Research on smartwatch-based hand gesture recognition.

POSTECH, Wireless Communication Machine Learning Lab *Dec. 2021 - Feb. 2022*
Undergraduate Research Internship; Advisor: Yo-Seb Jeon Pohang, South Korea

- Research on MIMO system.

SK Hynix, Test Prior Technology Team *Jun. - Aug. 2021*
Undergraduate Internship Seongnam, South Korea

- Research on performance and quality assessment methodologies for SSD and HDD.

Award and Honor

Outstanding Poster Awards, IPIU 2025 *Jan. 2025*
"HDR-NSFF: High Dynamic Range Neural Scene Flow Fields".

Publication

Conference

[C5] Yejin Yeo, Baek Sung-Eun, **Shin Dong-Yeon**, Lee Jung-Mok, Tae-Hyun Oh, "TypoErase: Training-Free Image Level Defense against Typographic Attacks," *under review.*

[C4] GeonU Kim, **Shin Dong-Yeon**, Tae-Hyun Oh, "Reflection-aware Generative Novel View Synthesis," *under review.*

[C3] **Shin Dong-Yeon**, Kim Jun-Seong, Kwon Byung-Ki, Tae-Hyun Oh, "HDR-NSFF: High Dynamic Range Neural Scene Flow Fields," *under review.*

[C2] **Shin Dong-Yeon**, Kim Jun-Seong, Kwon Byung-Ki, Tae-Hyun Oh, "Dynamic HDR Radiance Fields via Neural Scene Flow," ICCV Workshop on Wild3D: 3D Modeling, Reconstruction, and Generation in the Wild, 2025.

[C1] **Shin Dong-Yeon**, Kim Jun-Seong, Kwon Byung-Ki, Tae-Hyun Oh, "HDR-NSFF: High Dynamic Range Neural Scene Flow Fields," Workshop on Image Processing and Image Understanding (IPIU) 2025. (Outstanding Poster Awards.)

Projects

Development of spatio-temporal dynamic 3D cognitive map and lightweight localization software for outdoor autonomous driving environments. *Apr. - Nov. 2025*

- Constructing spatio-temporal cognitive maps from time-varying multimodal data and integrating them with Vision-Language Models to generate semantic descriptions.
- Funded by ETRI, Korea.

Reconstructing 3D cognitive map for driving environments using Vision-Language Models. *Apr. - Nov. 2024*

- Designing efficient techniques for building and leveraging multi-modal cognitive maps.
- Funded by ETRI, Korea.

Robust optical flow estimation against exposure change. *Jul. - Nov. 2023*

- Undergraduate Research Program, POSTECH AMILab.

Smart Watch-Based Gesture Recognition Using Time Series Classification. *Jul. - Aug. 2022*

- Research on recognizing and classifying user hand gestures using PPG and IMU signals from smartwatches.
- Undergraduate Internship, SAMSUNG MX buisness.

AI Algorithm Development for Estimating State of Lithium-Ion Battery. *Aug. 2021 - Jun. 2022*

- Developed a model to estimate SoC and SoH from battery time-series data.
- Undergraduate thesis project.

Teaching Experience

EECE372 Microprocessor Architecture and Applications *2024*
Serve as a teaching assistant. POSTECH

NAVER Boostcamp AI Tech 7th *2024*
Serve as a teacihng assistant for Computer Vision Theory course. NAVER & Upstage

Student Mentoring Program (SMP) *2021 - 2022*
Serve as a tutor for University Physics 1, 2. POSTECH

Technical Skills

Languages: Python, C/C++,
Libraries: PyTorch, OpenCV, Blender
Relevent Coursework: Visual Intelligence, Computatinonal Imaging, Advanced Linear Algebra, Machine Learning, Morphological Image Analysis, Intro. Reinforcement Learning, Efficient AI Model