Yeonsang Shin

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RESEARCH INTERESTS

Computational Imaging, Computer Vision, Event Cameras, AI Safety, Generative AI

EDUCATION

Korea Advanced Institute of Science and Technology (KAIST)   Daejeon, Korea
M.S. in School of Computing   *Sep 2025 - Jun 2027 (Expected)*
- **Visual Computing Lab.** Advised by Min H. Kim

Seoul National University   Seoul, Korea
B.S. in Electrical and Computer Engineering   *Mar 2019 - Aug 2025*
- **GPA:** 4.07/4.3 (3.93/4.0), *Summa Cum Laude*
* Mandatory Military Service Included (2021-2023)

Seoul Science High School   Seoul, Korea
High school diploma   *Mar 2016 - Feb 2019*

PUBLICATIONS

- Beomjun Kim, Kangyeon Kim, Sunwoo Kim, Yeonsang Shin, and Heejin Ahn. Domain-Agnostic Scalable AI Safety Ensuring Framework. *Under review*

- Yeonsang Shin*, Insoo Kim*, Bongkeun Kim, Keonwoo Bae, and Bohyung Han. Autoregressive Modeling and Generation of Sequences with Joint Discrete and Continuous Spaces. *Under review*

- Bosung An, Hoseung Choi, Yeonsang Shin, and Woo-seok Choi. CREAM: Cost-Effective Randomizer for Read Error Mitigation in QLC NAND Flash. *Under review*

- Yeonsang Shin*, Jihwan Kim*, Yumin Song, Kyungseung Lee, Hyunhee Chung, and Taeyoung Na. Generating Animated Layouts as Structured Text Representations. In **CVPR 2025 Workshop** on AI for Content Creation. [Project Page]

RESEARCH EXPERIENCES

Visual Computing Lab, KAIST   Daejeon, Korea (Hybrid)
Research Intern (Advisor: Prof. Min H. Kim)   *Jan 2025 - Aug 2025*
- **Computational Imaging.** Studied visual SLAM fundamentals and reviewed research papers on event cameras.

KRAFTON Inc., Deep Learning Div.   Seoul, Korea
AI Researcher Intern (Advisor: Prof. Kangwook Lee)   *Jun 2024 - Dec 2024*
- **3D Computer Vision.** Conducted research on 3D computer vision problems including novel view synthesis for unposed images and 3D inpainting, approaching these challenges as inverse problems through diffusion models.
- **AI-Driven Life Simulation (inZOI Project).** Engineered autonomous agent behavior systems using Small Language Models (SLMs) to enable dynamic action selection, strategic planning, and contextual reasoning for in-game characters.

Computer Vision Lab, Seoul National University   Seoul, Korea
Research Intern (Advisor: Prof. Bohyung Han)   *Jan 2024 - Jun 2024*
- **Autoregressive Generation.** Developed an autoregressive framework jointly modeling discrete and continuous values to maintain full precision in vector representations; research supported by Samsung Electronics.

SK Telecom, GST Media Gen AI Team   Seoul, Korea
AI Fellowship (Contract, Advisor: Taeyoung Na)   *May 2024 - Oct 2024*
- **Animated Layout Generation.** Proposed the first approach to extend layout generation by incorporating temporal dynamics; collaborated with GST Media Gen AI Team.

Data Science & Artificial Intelligence Lab, Seoul National University   Seoul, Korea
Research Intern (Advisor: Prof. Sungroh Yoon)   *Mar 2023 - Dec 2023*
- **Image Composition.** Studied the basics of AI and Computer Vision, solved the novel task of 'Subject-Driven Image Composition for Accessories.'

TEACHING ASSISTANT

FastMRI Challenge 2024 TA, Seoul National University   Seoul, Korea
Contest Coordinator (Advisor: Prof. Jongho Lee)   *Apr 2024 - Aug 2024*

Organized and supervised the contest with 160 participating teams, including the preparation of the challenge dataset, development of baseline codes, creation of guideline videos, and addressing issues. Managed GPU servers and evaluated the models submitted at the contest's conclusion.

Awards & Honors

Presidential Science Scholarship   *Jan 2019 - Aug 2025*
A full 4-year scholarship awarded for outstanding research performance in high school. $5,500 awarded every semester for full tuition and living expenses by the Government of South3D Computer Vision. Conducted research on 3D computer vision problems: novel view synthesis for unposed images

KRAFTON AI Fellowship   *Jan 2024*
Selected Top 6 among 1,000 participants in a competitive process. Awarded a research grant $7,500 and an internship offer.

1st/16 Teams, SK Telecom AI Fellowship   *Nov 2024*
Selected for proposed research in dynamic layout generation; awarded $4,300 research grant and opportunity to collaborate with industry researchers. Won first place in the fellowship research competition; awarded $2,500 prize.

Specialized Semiconductor Program Scholarship   *Nov 2023 - Aug 2025*
Awarded $750 upon selection and an additional $7,500 upon graduation for high-achieving students.

3rd/144 Teams, SNU FastMRI Challenge   *Jul 2023 - Aug 2023*
A significant competition held independently in the university, inspired by the FastMRI competition hosted by Meta. Presented a deep neural network for MRI reconstruction with undersampled data under restricted conditions.

Military Service Honored Family   *Feb 2023*
Awarded for family's three-generation legacy of serving as active-duty soldiers. 457 months of military service by six members, elite 0.2% of Korean men as of 2023.

Participation Prize, Final KMO (FKMO)   *Sep 2017*
IMO Final Candidate Selection Test for Korea

Internships & Experiences

Theta One, Inc.   Seoul, Korea
Deep Learning Engineer (Internship, Part-time)   *Nov 2022 - Jan 2023*
  - **Nonsense Detection** Developed a model to detect and classify various nonsense inputs, especially mild gibberish.

Republic of Korea Defense Communication Command   Gwacheon-si, Korea
Military Service   *Aug 2021 - Feb 2023*
  - **Telecommunications System** Maintained military microwave communication systems, providing backup supports for telecommunication stations.
  - **System Upgrades** Implemented new devices like spectrum analyzers to enhance telecommunication network stability.

DESILO, Inc.   Seoul, Korea
Software Developer (Internship)   *Apr 2021 - Jul 2021*
  - **Python-PALISADE Project** Implemented and distributed a Python wrapper for PALISADE, a C++ library for Homomorphic Encryption.
  - **Research on Google FHE Transpiler** Tested the stability and performance of the Google FHE Transpiler and presented adoptable ideas for the company.
  - **DESILO HE Library** Contributed to building internal APIs for the DESILO HE Library
  - **WebAPI** Developed an MVP website using FastAPI and MySQL.

Organizations & Activities

NAEK YEHS, Regular Member   *Jan 2023 - Present*
Honor Society sponsored by the National Academy of Engineering of Korea. Served as the Department Head of Strategy & Planning 3 Department in 2024.

SNU Tomorrow's Engineers Membership, Associate Member   *Sep 2024 - Aug 2025*
Honor Society of Seoul National University, College of Engineering

AttentionX, 5th cohort   *Jun 2024 - Present*
Independent AI research group from undergrad, grad students and industry

SNU Buddy Program   *Aug 2023 - Jun 2024*
Organized activities and events for international exchange students. Awarded the Best Group Award for both semesters

Skills & Languages

- **Programming Languages**   Python, C/C++, JavaScript, MATLAB
- **Frameworks/Libraries**   PyTorch, TensorFlow, Git, Docker, SQL, Amazon AWS, pandas
- **Languages**   English(Full proficiency; TOEFL iBT 109), Korean(Native)