

# Saebyeol Shin

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## EDUCATION

**Sungkyunkwan University (SKKU)**

**Seoul, Korea**

*BS in Data Science*

*03/2019 – 02/2024 (anticipated graduation)*

*BS in Computer Science and Engineering*

## PUBLICATIONS

1. Lee, G.H.\*, Shin, S.B.\*, Ko, D.G., Jung, J.Y., and Woo, S.S. **"A-ColViT: Real-time Interactive Colorization by Adaptive Vision Transformer."** International Workshop on Practical Deep Learning in the Wild at AAAI, 2023.
2. Lee, G.H., Shin, S.B., and Woo, S.S. **"Accelerating CNN via Dynamic Pattern-based Pruning Network."** ACM International Conference on Information & Knowledge Management (CIKM), 2022.
3. Lee, G.H., Shin, S.B., and Woo, S.S. **"Efficient Multi-Scale Feature Generation Network."** Korea Computer Congress (KCC), 2022.
4. Lee, S.J.\*, Ko, D.G.\*, Park, J.Y., Shin, S.B., Hong, D.H., and Woo, S.S. **"Deepfake Detection for Fake Images with Facemasks."** ACM Workshop on the Security Implications of Deepfakes and Cheapfakes (WDC), 2022.
5. An, J.J.\*, Kim, J.H.\*, Lee, H.B., Kim, J.B., Kang, J.H., Kim, M.H. Shin, S.B., Hong, D.H., and Woo, S.S. **"VFP290K: A Large-Scale Benchmark Dataset for Vision-based Fallen Person Detection."** Neural Information Processing Systems (NeurIPS), 2021.

\* Equal contributions

## RESEARCH EXPERIENCE

**SKKU DASH Lab**, Department of Artificial Intelligence

**Suwon, Korea**

*Research Assistant (Advisor: Prof. Simon S. Woo)*

*06/2021 – 12/2022*

- Established a pruning network to preserve the advantages of both static and dynamic networks, enhancing the kernel's representational power and achieving acceleration.

## WORK EXPERIENCE

**SK Telecom AI Fellowship**

**Pangyo, Korea**

*Modeling & Application Development Intern*

*06/2022 – 11/2022*

- Developed user-interactive, context/instance adaptive colorization model to colorize and restore grayscale images of historically significant events in Korea such as independence movements, Korean War, and democratization protests.
- Won an order for the 3rd year project to restore the old image from the Jeollanam-do Provincial Office supervised by the Ministry of Culture, Sports and Tourism.

## PROJECT EXPERIENCE

**Object Detection in Satellite Images**

**Hanwha System / ICT**

*Industry-Academic Cooperation Researcher*

*05/2022 – 09/2022*

- Contributed to the development of a rotated object detection network on satellite SAR datasets.

**Excellence Undergraduate Research Project**

**SKKU**

*Researcher, (A+ for whole participation – 2021 fall & 2021 winter & 2022 spring).*

*08/2021 – 06/2022*

- Examined efficient deepfake detection methods with manipulated images to prevent privacy invasion/security threats.

## **Solving Mathematical Problems using NLP Technology**

**Institute for ICT Promotion (IITP)**

*Researcher, 5<sup>th</sup> AI Grand Challenge*

*07/2021 – 05/2022*

- Constructed efficient deep learning models to solve mathematical problems that understands the context of natural language with improved inference speed compared to existing deep learning models.
- Distributed open-source software such as web and applications and demonstrated the solutions for math problems.

## **Abnormal Behavior Detection in CCTV using Object Detection Algorithm**

**IITP**

*Researcher, 4<sup>th</sup> AI Grand Challenge*

*06/2021 – 12/2021*

- Developed a novel, large-scale dataset in various real-world scenarios for the robust detection of fallen people.
- Published a research paper on the usefulness of the dataset to research fallen person detection, which can further extend to other applications such as intelligent CCTV or monitoring systems.

## **AWARDS AND HONORS**

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### **[Awards]**

- Dean Award in AI Project Class (Bronze Award) *12/2022*
- 3<sup>rd</sup> Place, 2022 Capstone Design Competition, Department of Software *12/2022*
- Grand Prize (2<sup>nd</sup> Place), SKT AI Fellowship *11/2022*
- 4<sup>th</sup> Place (top 1.5%), Natural Language-based Climate Technology Classification AI Competition, Green Technology Center / DAEON *08/2021*
- Research Grant Winner, 5<sup>th</sup> AI Grand Challenge, IITP *07/2021*
- Grand Prize (1<sup>st</sup> Place), Sungkyunkwan University Convergence Project *08/2020*

### **[Scholarships]**

- SIGIR Student Travel Grants for CIKM 2022 *10/2022*
- SKKU Student Success Changeui Scholarship (100% tuition support) *06/2022*
- SKKU Student Success Didimdol Scholarship *10/2020*
- SKKU Academic Excellence Scholarship (70% tuition support) *02/2020*
- Mega Study Scholarship (external) *05/2019*

## **TEACHING EXPERIENCE**

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### **SKKU Summer Data Science Bootcamp: Python Programming**

**Seoul, Korea**

*Teaching Assistant*

*07/2020 – 08/2020*

- Lectured on Python to enhance students' academic competencies and software skills.

## **LEADERSHIP & EXTRACURRICULAR ACTIVITIES**

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### **SKKU Convergence Project for Smart University Life during COVID-19**

**Suwon, Korea**

*Team Leader*

*07/2020 – 09/2020*

Provided "Take Eat Easy," a group food order service to reduce the burden of expensive delivery fee for single students.

### **SKKU Institute of Broadcast Research**

**Seoul, Korea**

*Member, Content Planning Department*

*03/2019 – 03/2020*

- Studied and filmed short movies and commercials with team members.
- Organized and participated in various campus activities and events such as welcoming party and student festivals.

### **SKKU Global Buddy Program**

**Seoul, Korea**

*Global Buddy Assistant Leader*

*09/2019 – 12/2019*

- Assisted exchange and international students adjust to the Korean culture, society, and university campus life.

## **PROFICIENCY IN SKILLS**

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**Computer/Programming:** Python, C, JAVA, R, LaTeX (all advanced)

**Languages:** Korean (native fluency), English (full professional proficiency)