Jung Won Yoon

Computer Engineering M.S. Student

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Jung Won Yoon is currently pursuing the M.S. degree in Computer Engineering at Hongik University, Seoul, South Korea. She received the B.S. degree in Computer Engineering at Hongik University. Also, Hongik University has one of the oldest Computer Engineering department in Seoul, known for its strong academic reputation. Her research focuses include Machine Learning, Artificial Intelligence, and Software Engineering.

Research Interests

- Machine Learning
- Artificial Intelligence
- Software Engineering

Education

Mar 2023 - Current

Master of Science: Computer Engineering

Hongik University - Seoul, South Korea

- GPA : 4.5/4.5

Mar 2018 - Feb 2023

Bachelor of Science: Computer Engineering

Hongik University - Seoul, South Korea

Experiences

Mar 2023 - Current

M.S. Student

AIS LAB (Artificial Intelligence, Software Lab), Seoul

- Advised by Prof. Youn Kyu Lee
- Conducted various research activities as a Research Assistant (RA), resulting in publication of 11 papers and filing of 2 patents
- Teaching Assistant (TA): 2023 spring "Video Image Processing"&"C-programming" / 2023 fall "Intermediate Machine Learning"
- Actively participated in diverse range of projects, collaborating with fellow graduate and undergraduate students

Apr 2022 - Feb 2023

Undergraduate Research Intern

AIS LAB (Artificial Intelligence, Software Lab), Seoul

- Advised by Prof. Youn Kyu Lee
- Contributed to publication of two articles in peer-reviewed journals, advancing scientific knowledge in the field.
  - "Defending against adversarial fingerprint attacks based on deep image prior", *IEEE Access,* Vol. 11, 2023.
  - "A Study on Adversarial Fingerprint Defense Using Self-Supervised Denoising from Single Image", *The Journal of Korean Institute of Communications and Information Sciences*, Vol. 48, 2023.
- Participated in various projects during the undergraduate research intern program.

Publications

[Journals]

- **Jung Won Yoon**, Hyun Jun Yook, Pyo Min Hong, Tae Hyung Kim*, and Youn Kyu Lee*, "Orthogonal Transform-Driven Data Augmentation for Limited Gaussian-Tainted Dataset." *IEEE ACCESS* Vol. 12, 2024.
- Soohyun Park, Hankyul Baek, **Jung Won Yoon**, Youn Kyu Lee*, Joongheon Kim*, "AQUA: Analytics-driven quantum neural network (QNN) user assistance for software validation." *Future Generation Computer Systems,* Vol. 159, 2024.
- Min Young Lim, Seong Hee Park, Soo-Hyun Lee, **Jung Won Yoon**, Pyo Min Hong, Hwajung Yoo, Kon-Woo Kwon, Jongwook Jeong, Youn Kyu Lee*, "VELCRO: A Visual-Based Programming Tool for Effortless Deep Learning Model Construction." *SoftwareX*, Vol. 26, 2024.
- Hwajung Yoo, Pyo Min Hong, Taeyong Kim, **Jung Won Yoon**, and Youn Kyu Lee*, "Defending Against Adversarial Fingerprint Attacks Based on Deep Image Prior." *IEEE ACCESS*, Vol. 11, 2023.
- Pyo Min Hong, Hwajung Yoo, Taeyong Kim, **Jung Won Yoon**, Tae Hyung Kim and Youn Kyu Lee*, "A Study on Adversarial Fingerprint Defense Using Self-Supervised Denoising from Single Image." *Journal of Korean Institute of Communications and Information Sciences*, Vol. 48, 2023.
- Pyo Min Hong, **Jung Won Yoon**, Hyun Jun Yook, Tae Hyung Kim*, and Youn Kyu Lee*, "ZeroTune: Zero-shot Inverse Imaging with Auto-tuned Hyperparameters and Untrained Generative Priors" [Submitted]
- Pyo Min Hong, So Hyun Kang, **Jung Won Yoon**, Hyun Jun Yook, Tae Hyung Kim*, and Youn Kyu Lee*, "No Clean Example Required: Resilient and Robust Defense Against Adversarial Attacks" [Submitted]

[Conferences]

- **Jung Won Yoon**, Hyun Jun Yook, Jae Eun Seo, Jae Hun Choi, and Youn Kyu Lee*, "Beyond Perspectives: Enhancing Pose Estimation via Viewpoint Transformation." *In Proc. of International Conference on Information and Communication Technology Convergence (ICTC)*, Jeju, Korea, 2023. [Oral Presentation]
- **Jung Won Yoon**, Hyun Jun Yook, Jae Hyun Cho, Su Yeon Kim, and Youn Kyu Lee*, "Proposal of Metamorphic Testing for Adversarial Attack-Resilient Fingerprint Recognition

Models", *The 35th Joint Conference on Communications and Information (JCCI),* Busan, Korea, 2024. [Oral Presentation]

- **Jung Won Yoon** and Youn Kyu Lee*, "Age-specific Image Reconstruction-based Fingerprint Recognition System for the Elderly", *The 34th Joint Conference on Communications and Information (JCCI),* Yeosu, Korea, 2023. [Oral Presentation]
- Jae Hyun Cho, Min Seo Shin, So Hyun Kang, **Jung Won Yoon**, and Youn Kyu Lee, "Composition-based Detail Preservation in Pose Transformation using Diffusion Models", *In Proc. of International Conference on Information and Communication Technology Convergence (ICTC)*, Jeju, Korea, 2024. [Submitted]

[Patents]

- Youn Kyu Lee, Jong-ho Kim, **Jung Won Yoon**, Hyun Jun Yook, Jae Hun Choi, and Jae Eun Seo, "System and method for interpolating an object by creating viewpoint conversion image." Korean Patent, No. 10-2023-0103951 (2023.08.09)
- Youn Kyu Lee, Jong-ho Kim, **Jung Won Yoon**, Hyun Jun Yook, Keun Lee, Jae Hyun Cho, Min Seo Lee, "System and Method for Measuring Rehabilitation Strength Using Video" Korean Patent, No. 10-2024-0115574 (2024.08.28)

Research Projects

- "Development of a Rehabilitation Application for Post-Orthopedic Surgery Recovery Using Motion Analysis AI and Catholic Medical Center Clinical Data Warehouse", The Catholic University of Korea Seoul St. Mary's Hospital [2023~Present]
  - **Project Manager** (2023 May~2024 July)
- "Development of an Integrated Development Framework Supporting Automated Neural Network Generation and Optimized Deployment Environment", ETRI(Electronics and Telecommunications Research Institute) [2022~Present]
- "Development of a deep learning-based adaptive fingerprint recognition system for the elderly", WISET(The Center for Women in Science, Engineering, and Technology) under the Ministry of Science and ICT [2023]
  - **Principal Investigator** (2023): Writing proposal, leading the project, managing the budget, and mentoring high school students
- "Analysis of Adversarial Attack Vulnerabilities and Defense Mechanisms in Biometric Authentication Systems", NRF(National Research Foundation of Korea) [2022-2023]
- "Development of an Automated Thermal Image Analysis Tool for Drones Using Deep Learning", Skyron Co. Ltd [2022 - 2023]

Skills

- Language: Korean, English (TOEFL iBT 106, TOEIC 935(LC 495, RC 440))
- Programming Language: Python, C/C++
- Frameworks: Pytorch, TensorFlow