Gibok Kim

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Current Position

KAIST, Republic of Korea, *September 2022 – Present*
Master's degree student, Nuclear & Quantum Engineering.

Current Research Topic

Generative models for Medical Imaging, Physics-based Deep learning approach, Text-Image Multimodal Representation of medical concepts, Clinical language understanding in Large Language Model. Recent works focus on the applicability test of super resolution algorithm in dental imaging.

Research interest: Generative Models, Medical Imaging, Image-Text Multimodal Deep Learning, Natural Language Processing

Education

Korea Advanced Institute of Science & Technology, **South Korea**, *September 2022 - Present*

M.S. in Nuclear & Quantum Engineering (GPA: 3.52/4.3) (Advisor: Seungryong Cho)

Sejong University, **South Korea**, *March 2015 – February 2019*

B.S. in Nuclear & Quantum Engineering (GPA: 3.92/4.5)

Professional Experience

Research Internship at Idaho National Laboratory, Idaho Falls, Idaho, *August 2021 - April 2022*

As a part of Advanced Reactor Technology and Design Department, I participated into the study: the comparison of energy generation plants, which aimed to elucidate the most efficient plant type with the cause of the thyroid cancer in residents near plants.

Military Officer at Air Defense Artillery branch, Gangwon-do, South Korea, *March 2019 - June 2021*

I managed the physical strength and combat proficiency for 10 platoon members, conducting the risk assessment of the stationed area, and communicating well with strongholds of other branches. This work leads me to achieve an accident-free operation in the stronghold.

Computer Skills

Programing Languages

C/C++, CUDA, MATLAB, Python, PyTorch

Tools

Geant4, GATE, GGEMS, ORIGEN-ARP, Maestro

Operating Systems

Windows, Linux

Honors and Awards

National Scholarship (for M.S study), KAIST *2022-Present*
Nuclear Global Scholarship, KNICF *2019*
ROTC (Reserve Officers' Training Corps) 1st Place Award, Sejong University *2019*
Work Scholarship, Sejong University *2018*
Nuclear Society Scholarship, KNS, *2017*

Academic Activities

Teaching assistant for public relations in Department of Nuclear & Quantum Engineering
KAIST, (2022-Present),

Publications

Conference

Gibok Kim, Sungho Yun, Taewon Lee, Seungryong Cho, 2024, Unsupervised Medical Image Generation for Dental Imaging: Super-Resolution of Synthetic Panoramic X-ray Images with CycleGAN, In *Proc. of Medical Imaging 2024: Image Processing*, SPIE.

HwanHui Jo, **Gibok Kim**, Seungryong Cho, 2023, An attenuation model-based dual-energy calibration method for dual-energy luggage inspection system, *IEEE NSS MIC RTSD* 2023.

Da-in Choi, Sungho Yun, **Gibok Kim,** Seungryong Cho, 2023, Ramp filtering effect mitigation network for metal artifact reduction in the image domain, *KSRI* 2023.

Gibok Kim, Sungho Yun, Taewon Lee, Subong Hyun, Seungryong Cho, 2023, Super-Resolution of Synthetic Dental Panoramic X-ray Images using Unsupervised Learning with CycleGAN, *KSMP* 2023.

Journal

Gibok Kim, Sungho Yun, Taewon Lee, Seungryong Cho, 2024, Improving CT-to-Pano: Super Resolution and Image Restoration in Dental Image Generation using Cycle Generative Adversarial Networks, [In-progress]