

RESEARCH INTERESTS

Human-Computer/Robot Interaction · Multimodal Learning · Generative Models

EDUCATION

Dongguk University Seoul, South Korea
M.S./Ph.D in Artificial Intelligence *Mar 2024 - Present*
• Cumulative GPA: 4.5/4.5
B.S. in Information and Communication Engineering *Mar 2019 - Feb 2024*
• Graduated with Distinction | Cumulative GPA: 4.16/4.5 | Major GPA: 4.29/4.5

RESEARCH EXPERIENCE

Bot Intelligence Group (BIG) Pittsburgh, PA, United States
Visiting Research Scholar at Carnegie Mellon University – supervised by Dr. Jean Oh *Aug 2025 - Feb 2026*

Machine Learning Lab Seoul, South Korea
M.S/Ph.D at Dongguk University – supervised by Dr. Jihie Kim *Mar 2024 - Present*

Artificial Intelligence Lab Seoul, South Korea
Undergraduate Researcher at Dongguk University – supervised by Dr. Gijoo Yang *Feb 2022 - Dec 2022*
• Statement Analysis Automation for Authenticity Assessment

Machine-to-Machine Lab (M2M Lab) West Lafayette, IN, United States
Visiting Scholar at Purdue University – supervised by Dr. Eric Matson *Oct 2021 - Dec 2021*
• IoT Farm Firefighting System using Simplified Data Transmission with UAV and LoRa

PUBLICATIONS

*: Equal Contribution

J. Park, **S. Choi**, J. Seo, M. Sohn, Y. Kim, and J. Kim.
SEA: Evaluating Sketch Abstraction Efficiency via Element-level Commonsense Visual Question Answering.
CVPR 2026. (Accepted).

S. Kang*, N. Park*, I. S. Shin*, E. Lee, **S. Choi**, J. Jung, J. K. Lee, Y. N. Lee, J. H. Moon, K. R. Joo, J. S. Kim, and J. Kim.
Machine Learning Prediction of Common Bile Duct Stones Using Synthetic Data to Guide Emergency ERCP Decisions.
Scientific Reports, 2026.

H. Seo*, **S. Choi***, M. Hong*, Y. Zhou, J. Kim, L. Ismaila, N. Etori, M. Agarwal, Z. Liu, J. Kim, and J. Oh.
Exposing Blindspots: Cultural Bias Evaluation in Generative Image Models.
IASEAI'26 Main Conference. (Accepted).

J. Han*, J. Seo*, J. Min*, **S. Choi**, H. Seo, J. Kim, and J. Oh.
Before We Trust Them: Decision-Making Failures in Navigation of Foundation Models.
AAAI 2026 Summer Symposium Series. (Accepted).

Z. Ullah, **S. Choi**, and J. Kim.
Contour-Guided Query-Based Feature Fusion for Boundary-Aware and Generalizable Cardiac Ultrasound Segmentation.
arXiv preprint, 2026. (Under Review).

J. Park, **S. Choi**, J. Seo, and J. Kim.
StableSketcher: Enhancing Diffusion Model for Pixel-based Sketch Generation via Visual Question Answering Feedback.
arXiv preprint, 2025. (Under Review).

Y. Kim, Y. Kim, Y. Shin, J. Lee, and **S. Choi**.
Dedicated Delivery Platform Based on the User Experience of the Visually Impaired.
KIPS, 2022, pp. 974–976.

PROJECTS

VLM-guided Collaborative Robotic Cinematography *Oct 2025 - Jan 2026*
• Designed a VLM-driven, director-in-the-loop workflow for stop-motion filmmaking using a robot arm (xArm 6).

Mobile Data Loss Prevention System for Real-Time Personal Data Monitoring

Undergraduate Capstone Design

Aug 2022 - Dec 2022

- Developed an Android app that monitors real-time network traffic to detect personal data leakage, with data schema design and regex-based matching.

OTHER EXPERIENCE

Teaching Assistant

Introduction to Programming (RGC1092)

Spring 2026

Convergence Capstone Design (SCS4031)

Spring 2026

Computer System (SCS2011)

Fall 2024, Spring 2025

Computer Network and Security (SCS4032)

Spring 2024, Spring 2025

Data Science Capstone Design (DSC4007)

Spring 2024, Fall 2024, Spring 2025

Teaching Materials Author

Open Source Software Project (SCS4045) — Docker & Git

Data Science Capstone Design (DSC4007) — Slack & Git

Computer Network and Security (SCS4032) — Socket Programming & Wireshark

IJCAI 2024 Volunteer Program

Jeju, South Korea

Student Volunteer

Aug 2024

Technology Team – Data Analysis & Product Engineering

San Jose, CA, United States

Intern at CIPHEROME, Inc

Mar 2023 – Feb 2024

- Designed and implemented COMPASS product interfaces and analysis pipelines; built cohort/dataset extraction, pre-processing, EDA/ML, and GWAS workflows on UK Biobank and MIMIC datasets; integrated Samsung Medical Center patient datasets into the platform for clinical analysis.
- Generated and validated Synthea-based synthetic medical datasets for Kangwon National University; authored hackathon materials and supported on-site coordination.

INTELLECTUAL PROPERTY

J. Kim, J. Park, S. Choi.

Method and System for Sketch Image Generation.

Korean Patent Application No. 10-2025-0108830, filed Aug. 7, 2025. Dongguk University Industry-Academic Cooperation Foundation.

J. Kim, S. Kang, E. Lee, S. Choi.

Machine Learning-Based Prediction Using Synthetic Data: A Novel Multicenter Model for Guiding Disease Diagnosis Decision-Making.

Software Registration No. C-2025-031588, registered Aug. 18, 2025. Dongguk University Industry-Academic Cooperation Foundation.

J. Kim, S. Kang, E. Lee, S. Choi.

Machine Learning-Based Prediction of Common Bile Duct Stones Using Synthetic Data: A Novel Multicenter Model for Guiding ERCP Decision-Making.

Software Registration No. C-2025-030387, registered Aug. 8, 2025. Dongguk University Industry-Academic Cooperation Foundation.

J. Kim, S. Kang, E. Lee, S. Choi.

3D Image-Tabular Fusion Model for Clinical Reasoning of Micro-Localized Lesions.

Software Registration No. C-2025-030390, registered Aug. 8, 2025. Dongguk University Industry-Academic Cooperation Foundation.

AWARDS & HONORS

ICT Challenge 2024 – 1st Place

Sep 2024

Ministry of Science and ICT, South Korea

Merit-Based Scholarship

2022 - 2023

Dongguk University, Seoul, South Korea

Academic Excellence Award

2020 - 2022

Dongguk University, Seoul, South Korea

Software-Centered Academic Excellence Scholarship <i>Dongguk University, Seoul, South Korea</i>	2021
Dongguk Leader Scholarship – Student Representative <i>Dongguk University, Seoul, South Korea</i>	2021
ICT Convergence Services Idea Competition based on 5G and AI – 1st Place <i>The Korean Institute of Communications and Information Sciences, South Korea</i>	Feb 2021
Academic Excellence Scholarship <i>Dongguk University, Seoul, South Korea</i>	2020

RELEVANT SKILLS

Programming: Python, C, SQL

Libraries: PyTorch, TensorFlow/Keras, scikit-learn, MONAI, OpenCV, SimpleITK, NumPy, pandas

Systems & Ops: FastAPI, Docker, MySQL, AWS, Git, GitHub Actions, Linux (Ubuntu), LaTeX

Languages: English (IELTS 8.0), Korean