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# Sang-Kyun Ko (고상균, 高像均)

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[Google scholar](#) | [Linkedin](#)

## EDUCATION

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**advanced Application for Intelligence systems Lab.(aAIs Lab), HanYang University (HYU), Seoul, Korea** [\[link\]](#)

Year of completion: September 2019 - February 2022, September 2023 - February 2024

- M.S. degree in **Department of Computer Science**
- Thesis: ‘Learning to Directly Maximize Evaluation Metrics: Focus on Matching Efficiency and Concordance Index’ [\[link\]](#)
- GPA 3.33 / 4.0
- Teaching Assistant: Artificial Intelligence (CSE4007), Automata Theory (ITE3061), Discrete Mathematics (MAT2020), Creative Software Programming: C++ (ITE1015)
- 2022, Led research on utilizing censored data as training data in survival analysis
- 2020, Collaborative Research with Particle Physics: Identifying additional b-jets in  $t\bar{t}b\bar{b}$  process
- Advisor: Prof. Yung-Kyun Noh

**System Software Research Lab.(SSR Lab), Sun Moon University, Asan, Korea**

(currently changed to Intelligent System and Software Research Lab., CBNU) [\[link\]](#)

Year of completion: March 2013 - February 2019

- B.S. degree in **Department of Computer Science**
- Graduation Project: ‘The Search System Using Deep Learning for Object Search in Multimedia.’
- GPA 3.35 / 4.5
- 2017, **Student Excellence Scholarship**
- Advisor: Prof. BongJae Kim

## SHORT TERM EDUCATION

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- February 2024, Pattern Recognition and Machine Learning Winter School 2024 (12 hours, Online) [\[link\]](#)
- January 2024, 3D Computer Vision and Neural Fields by Prof. Kwang Moo Yi, (9 hours, Online) [\[link\]](#)
- February 2021, Pattern Recognition and Machine Learning Winter School 2021 (8 hours, Online) [\[link\]](#)
- December 2020, The 11th KIAS CAC Online Winter School: The Parallel Computing and Artificial Intelligence (20 hours, Online) [\[link\]](#)
- April 2019, Launching into Machine Learning: an online non-credit course authorized by Google Cloud and offered through Coursera (14 hours, Online) [\[link\]](#)

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## EMPLOYMENT

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### Machine Learning Researcher

(Contract with Professor)

Oct 2023 - Ongoing

Institution: Seoul National University Bundang Hospital, SNUBH

Department: Coronary Artery AI team, Cardiovascular Center, Internal Medicine

- Coronary Angiogram X-ray Image Analysis
- 3D Reconstruction of Coronary Artery
- Estimating the Risk of Atherosclerotic Cardiovascular Disease

### Machine Learning Research Engineer

(Full-time employee)

April 2022 - July 2023

Institution: AINEX

Department: Gastroscopic AI Part, AI Research and Development Team

- Endoscopic Image Generation via Diffusion Model
- Gastroscopic Image Analysis for Diagnosis
- Real-time Image classification
- Detected Object Size Estimation in Monocular Lens

### Assistant Researcher

(Contract employee)

April 2019 - July 2019

Institution: Industry-University Cooperation Foundation at Sun Moon University

Department: Sytem Software Research Lab.

- Chinese Cursive Character Recognition based on Convolutional Neural Network

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## CONFERENCES

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1. **Sang-Kyun Ko** and Yung-Kyun Noh, (2023), Data Reconstruction Method for Learning to Censored Survival Data, *Korean Artificial Intelligence Association Summer Conference, 2023*, Poster presentation. [\[Program book link\]](#), [\[Paper\]](#), [\[Poster\]](#)
2. Oh, M. J., Park, J., Jeon, J., **Ko, S. K.**, Jo, S., Kang, S., Kim, S. H., Park, S. H., Chang, Y. H., Shin, C. M., Kang, S. J., Kim, S. G., & Cho, S. J. (2023). Application of artificial intelligence in the detection of Borrmann type 4 advanced gastric cancer in upper endoscopy. *United European Gastroenterology Journal*, 11(Supplement 8), pp0253, p666., Abstract Poster, [\[Abstract\]](#)
3. **Ko, S.**, Kim, B., and Kim, J. D., (2018), Deep Learning based Algorithm for Object Identification in Multimedia, *The 13th KIPS International Conference on Ubiquitous Information Technologies and Applications (CUTE 2018)*, Oral Presentation. [\[Program book link\]](#)
4. Park, K., Hong, B., **Ko, S.**, and Kim, B. (2018). Design and Implementation of Real-Time Web Authoring Tool Based on Drag-and-Drop Method. *The 13th KIPS International Conference on Ubiquitous Information Technologies and Applications (CUTE 2018)*, Oral Presentation. [\[Program book link\]](#)
5. Hyeontae Seo, Boseon Hong, **Sang-Kyun Ko**, Kichoel Park, Bongjae Kim, and Hyedong Jung (2017). A survey on the performance of Deep Learning based on multiple GPUs, Poster presentation *Korea Software Congress 2017, Busan.*, [\[Program book link\]](#) [\[Paper\]](#).

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## PUBLICATIONS

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1. Moon, I.T.\*, **Ko, S.K.\***, Kang, S.H. et al. (2024). Augmented Reality in Cardiology: Enhancing Visualization and Precision. *Current Cardiovascular Risk Reports*. (\*contributed equally to this work.)
2. Jang, C., **Ko, S. K.**, Choi, J., Lim, J., Noh, Y. K., and Kim, T. J. (2022). Learning to increase matching efficiency in identifying additional b-jets in the  $t\bar{t}b\bar{b}$  process. *The European Physical Journal Plus*, 137(7), 1-12.

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## AWARDS

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- Nov 2018, **Excellence prize**, 4th Industrial Revolution Talent Development Joint Festival in the fields of Papers or Coding, awarded by *Korea Society of Information Communication Security Ethics*
- Nov 2018, **Grand Prize**, Comprehensive Competition for Union of Computer Science and Electrical Engineering, awarded by the *Department of Computer Science at Sun Moon University*
- June 2018, **Silver Prize**, Comprehensive Competition for Computer Science, awarded by the *Department of Computer Science at Sun Moon University*
- Nov 2017, **Bronze Prize**, Global capston design workshop, awarded by *Idea Factory at Sun Moon University*
- April 2017, **Excellence prize**, Idea Contest held by the President, awarded by *President of Sun Moon University*

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## CERTIFICATES

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- May 2019, Engineer Information Processing(정보처리기사), Human Resources Development Service of Korea
- June 2016, Driver's license, Gyeonggi Nambu Provincial Police Agency

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## RESEARCH INTERESTS

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- Addressing theoretical and statistical issues in machine learning for big data analysis
- Exploring optimization techniques for the loss of deep learning models
- Being interested in diverse topics, including multi-modality, sequence models, and large-scale generative models

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## MILITARY SERVICE

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March 2014 - December 2015

Infantry of Army, Yanggu-gun, Gangwon-do, Republic of Korea

- PRC-999K Platoon Signalman and K3 Assistant Gunner