Sunghyun Kang

Github link | Personal homepage | kanghyun51015@gm.gist.ac.kr

Education

Gwangju Institute of Science and Technology (GIST) *August 2023 - Present*
Master of Science Candidate
Major in Electrical Engineering and Computer Science (EECS)

Gwangju Institute of Science and Technology (GIST) *March 2017 - August 2023*
Bachelor of Science Overall GPA: 3.77/4.5
Major in Electrical Engineering and Computer Science (EECS) Major GPA: 4.11/4.5
Minor in Mathematics

University of California, Berkeley *January 2022 - May 2022*
Berkeley Global Access Program, EECS major Overall GPA: 3.85/4.0
Undergraduate Study Abroad Program of GIST

Research Experiences

BioComputing Lab | *GIST* May 2021 – Present
Research Assistant Advisor: Prof. Sung Chan Jun

- Established a framework for real-time physiological artifact detection & reduction in EEG.
- Investigated the relationship between transcranial direct current stimulation (tDCS) applied to the posterior parietal cortex (PPC) and vigilance.
- Assembling a methodology to reduce motion artifacts in electrical impedance tomography (EIT) data.

CLOUDSTONE Inc. | *Startup Company* June 2022 - August 2022
Researcher

- Solved various vehicle routing problems (VRP) with many waypoints (+1000) focused on hyper-local service.
- Participated in tech incubator program for startup (TIPS) and series-A fundraising project.

Research Publications

Journals

[1] K. Won, J.Y. Choi, **S. Kang**, B. Park, M. Ahn, and S.C. Jun, "Study of the effects of sleep variability on psychophysiological states: Comparative analysis with tDCS", 2023. (under review)

Proceedings

[1] **S. Kang**, K. Won, H. Kim, J. Baek, M. Ahn, and S.C. Jun, "Achieving effective artifact subspace reconstruction in EEG using real-time video-based artifact identification", *IEEE International Conference on Systems, Man, and Cybernetics (SMC) 2023*, Oct. 2023. (accepted)

[2] **S. Kang**, J.Y. Choi, and S.C. Jun, "Effects of PPC tDCS on vigilance task and alpha power tendency", *International Biomedical Engineering Conference (IBEC) 2021*, Nov. 2021.

Teaching Experiences

Software engineering and project class | *GIST* March 2023 - June 2023
Teaching Assistant

- Provided assistance for students' projects.

Introduction to algorithm class | *GIST* September 2022 - December 2022
Head Teaching Assistant

- Created student forum (online/offline) for group study.
- Established auto-grading and auto-attendance systems for students.

Scholarships and Honors

Scholarships

GIST AI school scholarship | *Amount: 3,400,000 ₩ (KRW)* — March 2023 - June 2023

GIST academic scholarship | *Amount: 2,800,000 ₩ (KRW)* — March 2021 - February 2023

Government-sponsored scholarship at GIST | *Amount: 16,000,000 ₩ (KRW)* — March 2017 - February 2023

GIST scholarship for study abroad (UC Berkeley) | *Amount: 25,000 $ (USD)* — January 2022 - May 2022

GIST summer undergraduate research fellowship | *Amount: 500,000 ₩ (KRW)* — June 2021 - August 2021

GIST scholarship for summer session (UC Berkeley) | *Amount: 10,000 $ (USD)* — June 2018 - August 2018

Honors

Best graduation thesis award | *EECS major, Bachelor* — August 2023

Award from Ministry of Culture, Sports and Tourism | *Republic of Korea* — December 2019

Award from GIST president | *GIST* — September 2017

Invited Talks

Oral presentation for conference | *IEEE SMC 2023* — October 2023

Implementation of ASR to EIT data | *BiLab Inc.* — July 2023

Extracurricular Activities

Tech incubator program for startup (TIPS) | *Republic of Korea Government* — June 2022 - Present

Participant

- Successfully raised TIPS fund as a participant of CLOUDSTONE Inc.
- Conducted research for the company's leading technologies - VRP for many (1000+) waypoints under robot-based delivery system with global strategies.

Republic of Korea Air Force | *Republic of Korea* — Mar 2019 - Jan 2021

Reserve Surgent

- Mandatory service. Worked as a PATRIOT missile operator.
- Conducted several special missions against North Korea's tactical ballistic missiles and participated in launching sequence simulator maintenance/enhancement.

Wolfram Research Korean translation volunteer | *Wolfram Research* — October 2020 - February 2021

Localization Volunteer

- Participated in Wolfram Research Korean translation team.
- Translated Mathematica user guide video and examples.

Orchestra club AKDONG | *GIST* — March 2017 - November 2018

Woodwind Instrument Player, Concert Director

- Joined as a clarinet player and concert director.
- Supervised an overall 2018 orchestra program and GIST 25th anniversary concert.

2018 Pyeongchang Winter Olympic Volunteer | *IOC* — June 2017 - February 2018

Volunteer

- Worked in the accreditation service team. Provided translation service for foreigners, and made line-in-queue program for efficient workflow. Received a ministry prize for these overall efforts.

Baeummadang: knowledge-sharing volunteer program | *GIST* — March 2017 - December 2017

Teaching Volunteer

- Participated in a volunteer program that aims to provide academic service to local elementary, middle, and high school students. Received a GIST presidential award for noticeable achievement.

Skills

Languages: English (fluent), Korean (native)
Tools: EEGLAB, OpenViBE, Pytorch, TensorFlow, LaTeX, OR-tools
Computer Languages: Python, MATLAB, R, C, C++, JAVA, Mathematica, Verilog