SUNGHYUN KANG

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Personal Statement
A committed student who is interested in the application of computer science in the real world. Mainly interested in the intersection of these fields. Here's my GitHub in case you need them.

EDUCATION

Gwangju Institute of Science and Technology (GIST) *March 2017 - Present*
Undergraduate, Senior Overall GPA: 3.84/4.5
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
Exchange Student of GIST Total Credits: 16

SKILLS

Computer Languages	Python, MATLAB, R, C, JAVA, C++, Mathematica, Verilog
Software & Tools	LaTeX, EEGLAB, Pytorch, MediaPipe, OpenViBE, OR-tools
Language	Korean (native), English (fluent, iBT TOEFL score of 104)

EXPERIENCE

BioComputing Lab at GIST September 2022 - Present
Undergraduate internship *PI: Prof. Sung Chan Jun*

· Studied on the relationship between facial movement and brain power contamination in the view of computer vision.
· Currently writing a graduate thesis.

Introduction to algorithm class at GIST September 2022 - December 2022
Head teaching assistant

· Marked assignments/exams and held office hours to answer students' questions.
· Established auto-grading and auto-attendance system for students.

CLOUDSTONE Inc. June 2022 - August 2022
researcher

· Solved various vehicle routing problems (VRP) focused on hyper-local service.
· Made knowledge-based shop recommendation program processing large data by using natural language processing (NLP).
· Participated in tech incubator program for startup (TIPS) and series-A fundraising project.

BioComputing Lab at GIST May 2021 - December 2021
Undergraduate internship *PI: Prof. Sung Chan Jun*

· Studied on the relationship between transcranial direct current stimulation (tDCS) applied to the posterior parietal cortex (PPC) and vigilance.
· Participated in research to publish a conference paper in IBEC 2021.

HONORS & SCHOLARSHIP

GIST academic scholarship March 2021 - Present

· Scholarship awarded to students who showed high achievement in their grades.

Government-sponsored scholarship at GIST March 2017 - December 2022

· Scholarship awarded to most GIST students by the Korean government.

Scholarship for GIST study abroad program January 2022 - May 2022

· Scholarship awarded to students participating in the GIST study abroad program at UC Berkeley. Only offered to 8 students per year.

GIST summer undergraduate research fellowship (G-SURF) June 2021 - August 2021

· Scholarship awarded to students participating in a summer internship program in GIST.

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

· Received a prize for high effort during the 2018 Pyeongchang Winter Olympic period. Offered for a few selected participants who have noticeable achievements.

Scholarship for summer session abroad, UC Berkeley June 2018 - August 2018

· Scholarship awarded to students studying abroad during a summer session.

GIST academic scholarship September 2017 - December 2017

· Scholarship awarded to students who showed high achievement in their grades.

ACADEMIC ACTIVITIES

Neuroscience technology: Learned from basic neuroscience to leading technologies currently leading the field, especially in neuro-optometry.

Probability and random processes: Covered from probability schemes such as Bayes rule to various distributions/processes, information theory, Markov chain, hypothesis testing, Hilbert Space, and Kalman filter.

Computer vision: Implemented structure from motion (SFM) methodology using scale-invariant feature extraction (SIFT), random sample consensus (RANSAC), and triangulation with optimization techniques. Applied image harmonization using region-aware adaptive instance normalization (RAIN).

Artificial intelligence: Implemented various methods such as searching algorithms, simul-
-taneous localization and mapping (SLAM), Markov decision process (MDP), and learned basic machine learning (ML) and reinforcement learning (RL).

Computational models of cognition: Implemented various cognitive & language models from the past to the present scheme using multidimensional scaling (MDS), Markov chain Monte Carlo (MCMC), and information theory.

RELEVANT COURSES

Major courses
Computer vision
Probability and random process
Introduction to artificial intelligence
Computer system theory and laboratory
Computer networking

Minor courses
Real analysis and applications
Graph theory
Linear algebra and its application
Differential equations
Numerical analysis

EXTRACURRICULAR ACTIVITIES

Tech incubator program for startup (TIPS) June 2022 - Present
Researcher, Presentation participant

· Successfully raised TIPS fund as a participant of Cloudstone Inc. Conducted research for the company's leading technologies (VRP for many(100+) waypoints, robot-based delivery system), made a basis for global strategies, and write a transcript for the presentation.

Brain power summer school August 2021
Participant

· Participated in brain power summer school hosted by the Korean society for EEG and neurophysiology to learn how to handle EEGLAB tools in the actual field studies.

Wolfram research Korean translation volunteer October 2020 - February 2021
Team member

· Participated in Wolfram Research Korean translation team. Focus on translating the Mathematica user guide video, examples, and basic knowledge about overall mathematics.

Republic of Korea air force March 2019 - January 2021
Reserve sergeant

· Mandatory service. Worked as PATRIOT missile operator, launching sequence simulator maintenance, and technical manual translator.

GIST orchestra AKDONG March 2017 - November 2018
Woodwind instrument player, concert director

· Joined as a clarinet player and concert director. Supervised an overall 2018 orchestra program.

2018 Pyeongchang Winter Olympic Committee 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.