

Sangeon Jeon

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Education

Georgia Institute of Technology | Atlanta, GA

Bachelor of Science in Electrical Engineering, GPA 4.00 /4.0

January 2023 – Present

Expected Graduation, Dec 2024

Korea Advanced Institute of Science and Technology | Daejeon, South Korea

Bachelor of Science in Electrical Engineering, GPA 3.92 /4.3

February 2018 – Present

Expected Graduation, Feb 2025

Experience

Korea Advanced Institute of Science and Technology | Daejeon, South Korea

KAIST Maker-a-thon (Topic: Item for the Elderly Living Alone)

Summer 2024

- Participated in three weeks of development, brainstorming and prototyping an item suitable for the topic using materials and equipment provided by KAIST makerspace. Led a team of four as the leader and won the top award with \$2000.
- Proposed an RFID token system to manage the expiration dates of food in refrigerators. Innovated the pre-existing RFID refrigerator system by installing an RFID reader on a token container instead of the refrigerator, which significantly decreased the cost and simplified the management algorithm.
- Managed the team through difficult times, changing the item three times during the three weeks. Took charge of the entire software coding process using C# UWP.

Georgia Institute of Technology | Atlanta, GA

Senior Design Project: Plant Physiology

Spring 2024

- Developed a system to record and play back the action potential of a Venus flytrap in collaboration with Vivent, a Swiss agriculture company. Successfully closed the flytrap using only electrical signals.
- Designed the overall project blueprint, including designating specifications of each component. Developed a strategy to diagnose the plant's status based on the impulse response of the stalk, reconstruct the action potential, and play back the artificial action potential to close the flytrap.
- Built a digital system, including M2M communication protocol between Seeeduino on the device and MATLAB on a laptop, along with a MATLAB GUI app. Developed an algorithm to correct time delays from communication, enabling reliable recording and playback of signals up to 100 Hz, which exceeds the necessary frequency for plant signals.

Georgia Institute of Technology | Atlanta, GA

Junior Design Project: RoBACHtic Symphony

Fall 2023

- Engineered a violin-playing machine with a piano keyboard interface to help children learn to play the violin.
- Designed and built all mechanical parts, including 3D-printed components with SolidWorks, such as the robot arm, gearbox, and model violin, and laser-cut wooden panels for a container box. Assembled the machine with teammates.
- Authored over one-third of the project documentation, including the Market Analysis and Technological Verification sections.

Dong Il Vision | Anyang, South Korea

June – August 2023

Intern / Software Engineer

- Developed a labeling program with C# WPF, which facilitates labeling the position of objects in pictures for the machine learning. Contributed to make a whole computer vision system, which in turn differentiate the product from others.
- Earned approximately 2,000,000 won per month, working about 70 hours per week.

Korea Advanced Institute of Science and Technology | Daejeon, South Korea

NICA Lab Undergraduate Research Assistant

Summer 2020

- Developed an algorithm to segment neurons from brain microscope images. Studied Convolutional Neural Networks through Stanford's CS231n course.

Dong Il Technology LTD | Hwaseong, South Korea

June – August 2018

Intern / Human Resource

- Coded a VBA to create an Excel macro file that generates job performance evaluation sheets and sends them to employees automatically. Permanently reduced the task's duration by about three days per quarter.
- Earned approximately 1,500,000 won per month, working about 30 hours per week.

Teaching

Korea Advanced Institute of Science and Technology | Daejeon, South Korea

Programming Tutor

Spring 2019

- Tutored two freshmen for 'Introduction to Programming' 4 hours a week. Paid 25,000 won per hours.

Calculus Tutor

Fall 2019

- Tutored two freshmen for 'Calculus I' 4 hours a week. Paid 25,000 won per hours. One of students got an A+ on 'Calculus I'

Introduction to Programming TA

Spring 2020

- Taught students during the labs and graded their assignments during the pandemics. Paid about 400,000 won per month.

Georgia Institute of Technology | Atlanta, GA

ECE Tutor

Spring 2024

- Managed the tutoring sections 6 hours a week. Paid \$15 per hour. Tutored all basic CEE courses including 'Introduction to Signal Processing', 'Circuit Analysis', 'Digital System Design' and 'Engineering Software Design'

Awards

Dean's List at KAIST

Spring 2018, Fall 2022

Dean's List at Gatech

Spring 2023, Fall 2023, Spring 2024

Relevant Coursework

Korea Advanced Institute of Science and Technology | Daejeon, South Korea

Signal and System: LTI System, DTFS; CTFS; DTFT; CTFT; Laplace Transform; Z Transform; Nyquist's Theorem

Probability and Introductory Random Processes: WSS/SSS; Poisson Point Process; Markov Process

Communication Engineering: MAP, Viterbi Algorithm, ISI Channels, OFDM, Waveform Shaping

Linear Algebra: Eigenvalue/vector; Diagonalization; Jordan Rational Form; Spectral Theorem; Characteristic/Minimal Polynomial;

Georgia Institute of Technology | Atlanta, GA

Fundamental of DSP: DFT, Overlap Add/Save, FFT & IFFT Algorithm, Kaiser Window, PCA

Random Signal Processing and Its Application: MMSE, MVUE, MLE, MoM Estimator, BLUE, LLSE, Markov Random Field

Application of DSP: AR model, Linear Predictor, Gray Code

Skills

Programming: Java, Python, Pytorch, C, C++, C#, MATLAB, Excel VBA, Verilog(beginner)

Software: Solidwork, HFSS, Multisim

Hardware: Oscilloscopes, Function Generators, Mutlimeters, ATmega128A, Xiao Seeeduino

Machine Shop Tools: Grinders, Laser Cutters, 3D Printers

Languages: Korean (native), English (conversational), Japanese (beginner)