

Seongwon Jang

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<https://github.com/JungSeong>

EDUCATION

Sejong University

B.S. in Electronics and Information Engineering

Seoul, South Korea

Mar. 2019 – Now

- GPA: 4.03/4.5 (Major GPA : 4.13/4.5, ranked 31st out of 239 students)

RESEARCH INTERESTS

- 3D Scene Understanding
- 3D Reconstruction
- Pose Estimation
- Gaussian Splatting
- Multi-Modal Models

LANGUAGE SKILLS

English (Intermediate) :

- Delivered a presentation in English during Microwave Engineering class (Apr. 2024)
- TOEIC Score: 935 (Jan. 2023)

EXTRACURRICULAR ACTIVITIES

Addnedu 44 days Robotics & AI BootCamp

Team Member

Gasan, South Korea

Apr. 2025 – Now

- Participating as a team member developing Autonomous Restaurant Solution, 'RoboDine'
- Collaboratively studied principle of Camera Calibration, Coordinate Transformations, algorithms such as solvePnP, DBSCAN, and Hough Transform
- Gained experience in Agile-Style Code Development, Software Architecture Design, and Google Python Coding Style
- Became familiar with Git, and collaborative tools such as Confluence, Jira and Slack

Academic Gathering, 'OROCA'

Team Member

Pangyo, South Korea

Mar. 2025 – Now

- Participating as a team member developing Raspberry Pi 4 Based Human-Interactive Household Robot, 'Robo'
- Designed 2D-LiDAR point cloud visualization ROS2 package using Rviz

Academic Club, 'AIV'

Team Member

Sejong University

Nov. 2024 – Now

- Studied principle of Robot Pose Estimation using Extended Kalman Filter (EKF) with GPS RTK & IMU
- Gained experience with ROS1 Noetic, simulators such as Gazebo and Rviz, and the 3D environment modeling tool, RoadRunner
- Collaboratively studied core technologies of autonomous driving, focusing on Perception, and Localization

Academic Club, 'Prompt'

Study Leader & Member

Sejong University

Mar. 2024 – Dec. 2024

- Participated as a team leader of developing Facial-Expression Recognition Web Application using a Residual Masking Network
- Created Coding Exercises and Conducted C Language teaching sessions / <https://github.com/JungSeong/Prompt-C-Study.git>
- Collaboratively studied Linux OS with study members

PROJECTS

RoboDine, Autonomous Restaurant Solution

Team Member / <https://github.com/addnedu-roscamp-4th/roscamp-repo-2>

Gasan, South Korea

Apr. 2025 – Now

- Designed and implemented ROS2 package for Human-Robot Interaction using Whisper, ChatGPT API and

- LangChain library
- Designed and implemented contaminant detection SW using DBSCAN and Hough Circle Transform algorithms
- Designed and implemented multiprocessing-based ChatBot's SW using ChatGPT API and LangChain library
- Designed and implemented ROS2 package for dynamic/static obstacle state instructor using MediaPipe
- Implemented solvePnP algorithms to estimate 6 DoF pose of the object with respect to the robot arm camera
- Labeled datasets with Roboflow Keypoint Detection Model and trained them using the YOLOv8-pose model, improved performance by inspecting labeled datasets, applying dropout and data augmentation

Robo, Household Companion Robot

Team Member / <https://github.com/JungSeong/Robo.git>

Pangyo, South Korea

Mar. 2025 – Now

- Designing multiprocessing-based Human-Interactive Robot SW using Gemini API, and LangChain library on Raspberry Pi 4

Capstone Design - AI-based Book Kiosk Service (AIBAK)

Team Member / <https://github.com/JungSeong/AIBAK.git>

Sejong University

Sep. 2024 - Dec. 2024

- Participation in IoT Convergence & Open Sharing System's 2024 In-Jeju Challenge (Excellence Award)
- Designed and Implemented fairytale's TTS generative model using Elevenlabs API
- Designed and Implemented fairytale's story generative model using ChatGPT API, and LangChain library

Facial Expression Recognition web application with Residual Masking Network

Team Leader / <https://github.com/JungSeong/RMN-Project.git>

Sejong University

Apr. 2024 - May. 2024

- Established MySQL DBMS and applied Flask Web Framework for Backend Development

RESEARCH EXPERIENCES

Intelligent Vehicle Perception Group (IVPG)

Sejong University

Undergraduate Research Program, Advisor: Jae Kyu Suhr

Mar. 2025 – Now

- Studying principle of Machine Vision, especially on Camera Coordinate System and Image Filtering
- Designed One-Stage Object Detector model using TensorFlow & PyTorch Framework from scratch, and implemented model on Pascal VOC 2012 Datasets
- Studied principle of AI Vision, especially on Object Detection models

Autonomous Intelligent System Lab (AISL)

Sejong University

Undergraduate Research Program, Advisor: Jaeho Kim

Aug. 2024 – Sep. 2024

- Studied principle of Artificial Intelligent, especially on implementing CNN-based architectures, and Transformer models using PyTorch Framework

IT SKILLS

Programming Languages

Python (Advanced) :

- Developed RoboDine, Robo, and AIBAK Project's Core SW
- Proficient in implementing python virtual environment such as python-venv and anaconda

C++ (Beginner) :

- Solved algorithm problems on Baekjoon Online Judge (Silver 1)

C (Beginner) :

- Created Coding Exercises and led collaborative study sessions

MATLAB (Basic) :

- Visualized GPS sensor data for trajectory analysis

OS

Linux (Intermediate) :

- Developed most of AI-related projects on Ubuntu OS, with hands-on experience in configuring CUDA development environments.
- Proficient in optimizing workflows using custom 'alias' commands and shell scripting for efficient navigation and task automation

Middleware

ROS2 (Intermediate) :

- Designed 2D-LiDAR point cloud visualization ROS2 package using Rviz

- Designed and implemented obstacle's Dynamic / Static Status Instructor ROS2 package using MediaPipe

Libraries

- PyTorch, TensorFlow, OpenCV, LangChain, Flask

Others

- Git, MySQL, Docker

SCHOLARSHIP

- 에텔바이스 장학금, 세종대학교 (2nd semester, 2024)
- 국가 장학금, 한국장학재단 (2nd semester, 2024)
- 독서 장학금, 세종대학교 (1st semester, 2024)
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- 국가 장학금, 한국장학재단 (1st semester, 2019)

AWARDS

- 우수상, 제 1회 사물인터넷 혁신융합대학 In-Jeju 챌린지 (Dec. 2024)
- 장려상, 세종대학교 제 62회 독서 경시대회 (May. 2024)
- 장려상, 세종대학교 제 61회 독서 경시대회 (Dec. 2023)
- 최우수상, 세종대학교 제 60회 독서 경시대회 (Oct. 2023)