Seongwon Jang

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https://github.com/JungSeong

EDUCATION

Sejong University	**Seoul, South Korea**
B.S. in Electronics and Information Engineering	**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

Addinedu 44 days Robotics & AI BootCamp	**Gasan, South Korea**
Team Member	**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'	**Pangyo, South Korea**
Team Member	**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'	**Sejong University**
Team Member	**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'	**Sejong University**
Study Leader & Member	**Mar. 2024 – Dec. 2024**

- Participated as a team leader of developing Facial-Expression Recognition Web Application using a Residual Masking Network
- Created Coding Exercies 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	**Gasan, South Korea**
Team Member / https://github.com/addinedu-roscamp-4th/roscamp-repo-2	**Apr. 2025 – Now**

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

LangChain library

- 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   **Pangyo, South Korea**
Team Member / https://github.com/JungSeong/Robo.git   **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)   **Sejong University**
Team Member / https://github.com/JungSeong/AIBAK.git   **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   **Sejong University**
Team Leader / https://github.com/JungSeong/RMN-Project.git   **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 Exercies 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

- 에델바이스 장학금, 세종대학교 (2nd semester, 2024)
- 국가 장학금, 한국장학재단 (2nd semester, 2024)
- 독서 장학금, 세종대학교 (1st semester, 2024)
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- 국가 장학금, 한국장학재단 (2nd semester, 2020)
- 에델바이스 장학금, 세종대학교 (2nd semester, 2019)
- 국가 장학금, 한국장학재단 (2nd semester, 2019)
- 에델바이스 장학금, 세종대학교 (1st semester, 2019)
- 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)