

# Ryan (Kyungwon) Jung

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Website:



## Summary

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Software Engineer with hands-on experience in computer vision, embedded systems, and autonomous robotics. Built full-stack web apps and custom tools using React, Node.js, and Python, alongside ROS-based navigation systems and machine learning pipelines. Adept at rapid prototyping, cross-disciplinary problem solving, and translating complex requirements into efficient, working systems.

## Skills

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**Languages:** Python, C++, TypeScript, JavaScript, SQL, C, VBA

**Frameworks & Libraries:** PyTorch, Tensorflow, OpenCV, Pandas, numpy, Roboflow, React, Node.js, Express

**Tools & Systems:** Git, Docker, Linux, ROS, PX4, MAVROS

**Concepts:** Computer Vision, Embedded Systems, SLAM, RGB-D Vision, REST APIs, CI/CD

## Work Experience

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### Software Engineer

*Pylon Electronics* | 2023.10 - 2024.09

- Developed automated maintenance software for aviation equipment, reducing turnover time by 98%
- Developed a Deep Learning OCR system to process data from devices without communication ports
- Developed custom models using TensorFlow to improve data extraction accuracy by 25%
- Integrated Google Cloud LLM API to parse and contextualize extracted values for data reliability

### Software Engineer

*Skydweller Technologies* | 2025.09 - 2025.10

- Developed software for autonomous drones used to clean ships and military vessels
- Developed pipeline for integrating autonomous navigation software with 3D simulation software

## Projects

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### 7-Segment Screen Data Extraction System

*TorchVision* | 2024.11

- Developed a computer vision OCR model using PyTorch
- Established dataset using Roboflow, streamlining the model development process compared to previous methods
- Improved model accuracy by 15% through hyperparameter tuning and data augmentation
- Reduced development time by 20% through transfer learning using Faster R-CNN

### Edge Computing Powered Autonomous Drone

*UBC & ICON Lab@Columbia* | 2025.1 - 2025.08

- Project Leader and Software Lead for the 6-inch SLAM-based HVAC inspection drone project
- Designed custom PCB for sensor fusion and control, improving flight stability by 30%
- Utilized Raspberry Pi and edge computing, reducing the existing drone size by 43% and weight by 51%
- Implemented a DL RGB distance model, achieving 40% power improvement and 30% weight reduction
- Implemented autonomous navigation through MAVROS + FUEL, achieving a location error of less than 0.5m
- Containerized the system using Docker to enhance deployment consistency and efficiency

## Education

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### ECE Electrical Engineering

*University of British Columbia (UBC)* | 2025