# Ryan Jung

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## Summary

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.

## Technical Skills

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

**Frameworks & Libraries:** React, Node.js, Express, OpenCV, TensorFlow, PyTorch

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

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

## Experience

### Software Engineer

*Pylon Electronics | October 2023 - September 2024*

- Built a Python-based machine vision GUI, reducing manual screen reading time by 70%
- Automated calibration procedures using VBA, eliminating repetitive tasks and lowering technician workload by 95%
- Boosted torque calibration speed by 40% by deploying Bluetooth-enabled automation over the Serial Port Protocol
- Designed a SolidWorks-based tensiometer calibrator, cutting cost by 60% and increasing accuracy

## Projects

### Autonomous RGB-D Drone (Icon Drone)

Link | *UBC & Icon Lab | January 2025 - Present*

- Led a team of 4 as project organizer to develop a 6" drone with SLAM-based navigation for HVAC inspection
- Designed a custom PCB for sensor fusion and control, improving flight stability by 30% and streamlining data acquisition
- Streamlined real-time video and depth streaming over WiFi to ground station
- Integrated ORB-SLAM3 with Depth Anything V2 to generate RGB-D data, improving power efficiency by 40%
- Enabled autonomous navigation via MAVROS + FUEL with <0.5m positional error

### TensorOCR – Intelligent Screen Data Extractor

*Pylon Electronics | August 2024 - September 2024*

- Reduced manual data entry workload by 40% by designing a computer vision OCR system using OpenCV and Python
- Enhanced data extraction accuracy by 25% through a custom-trained TensorFlow model optimized for numeric display patterns
- Integrated a LLM API to parse and contextualize extracted values, boosting data reliability and enabling modular deployment

### Unreal Engine 4 – Steam Workshop Mods

Link | *August 2023 - Present*

- Created and maintained a suite of Unreal Engine 4 mods, achieving 53,000+ downloads and with a 4.8/5 average user rating.
- Released regular feature updates and patches based on community feedback, improving user retention and engagement by 50%
- Enhanced mod compatibility across different environments and engines, reducing user-reported conflicts by 85%

## Education

Bachelor of Applied Science in Electrical Engineering — *University of British Columbia, Vancouver | Expected Graduation - 2025*

- Relevant Coursework: Data Structures & Algorithms, Embedded Systems, Machine Learning, Deep Learning, Computer Vision, Control Systems

## Certifications & Memberships

- UBC Engineering Co-op Program — *September 2023 - Present*
- Engineers and Geoscientists British Columbia — *September 2021 - Present*