

# Kyuwon (Andy) Choi

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## EDUCATION

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**University of California, Los Angeles**, Los Angeles, CA | M.S. Mechanical Engineering | GPA 3.70 | June 2021  
**Cornell University**, Ithaca, NY | B.S. Mechanical Engineering, Cum Laude | GPA 3.55 (Major GPA: 3.63) | May 2020

## WORK EXPERIENCE

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- Roboligent**, Austin, TX | *Robotics AI/ML Engineer* Oct 2024 – Present
- VLA (Vision Language Action) Model Development
    - Architecting and fine-tuning Vision-Language-Action (VLA) models for the Robin humanoid
    - Implemented end-to-end pipelines for complex manipulation tasks using multi-modal sensor fusion
  - Developing AI infrastructure for Robin, primarily on NVIDIA Jetson Thor
    - Engineered a high-throughput shared-memory camera system to synchronize multi-camera streams with high-frequency robot state data, eliminating I/O bottlenecks
  - ROS2 integration for robotics control
    - Designed and deployed custom inference servers achieving 50 Hz action execution
    - Developed a specialized shared-memory protocol to enable sub-millisecond data exchange between ROS2 and ML inference engines
- AgileSoDA**, Seoul, Korea | *Reinforcement Learning Research Engineer* July 2021 – Oct. 2024
- Developed an AI Robotics product: RoboSoDA
    - Government-funded project on RL-based Palletizing Application using a Doosan Robot
  - Developed a B2B reinforcement learning MLOps platform: BakingSoDA
  - Developed an AI-based semiconductor design optimization solution: ChipNSoDA
    - Collaborated with a semiconductor design house in Korea to actualize the solution
  - Internship (Summer 2020)
    - Placed 3<sup>rd</sup> in LG manufacturing optimization contest; developed RL algorithms for TV production line efficiency with LG Electronics

## RESEARCH EXPERIENCE

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- Autonomous Systems/Verifiable Robotics Research Group, Cornell University**, Ithaca, NY Sep 2018 – Dec 2019  
*Undergraduate Research Assistant (Advisors: Professors Hadas Kress-Gazit and Mark Campbell)*
- Developed autonomous manipulation and navigation skills for KUKA youBot and Duckiebot platforms using ROS and Python; implemented particle filter algorithms for AprilTag-based localization.
  - Generated high-fidelity 3D maps of indoor environments by performing multi-sensor fusion (LiDAR, ZED Stereo Camera, Odometry) using RTAB-MAP and RVIZ.

## PUBLICATIONS

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- Practical Mixed Palletizing Manipulator System: Incorporating Practical Reinforcement Learning and Configuration-Space Motion Planning, *IEEE Transactions on Automation Science and Engineering*, Nov 2025
- Language, OCR, Form Independent (LOFI) pipeline for Industrial Document Information Extraction, *EMNLP 2024 Industry Track*
- Heuristic Algorithm-based Action Masking Reinforcement Learning (HAAM-RL) with Ensemble Inference Method, *Arxiv Preprint*, March 2024
- Reinforcement Learning Based Pallet Loading Algorithm and its Application to a Real Manipulator System *Ubiquitous Robots 2023, Honolulu, HI, USA*
- Reinforcement Learning Based Palletizing Methodology to Respond to Diverse Logistics Environments *KRoC 2023, PyeongChang, Korea*

## TECHNICAL SKILLS

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- VLA, SDLC, CI/CD, Reinforcement Learning, Python (PyTorch, TensorFlow), Robot Operating System (ROS2)