Lingala Manisha

Master's Student

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Master's student in Electronics and Electrical Engineering with a strong academic record and hands-on research experience in control systems, robotics, imitation learning, and artificial intelligence. Completed multiple projects in imitation learning and control theory, showcasing practical expertise in these domains. Actively seeking opportunities to apply my expertise in solving complex real-world problems and driving technological innovation.

Experience

Researcher Consultant at AI Robotics (Part-Time) *Apr 2025-present*

- Developing a transformer-based computer vision model to detect welding defects in automotive parts, focusing on identifying issues like air fillers, cuts, and insufficient weld thickness.
- Assisting in the control and programming of Yaskawa industrial robots to automate manufacturing processes, integrating vision-based feedback for enhanced precision.

Full time Researcher at Physical Intelligence Lab, Kyungpook National University *Mar 2024-present*

- Developed a vision-based robotic solution using YOLOv11 for cucumber detection, integrating a ViperX-300s robotic arm and an AGV for autonomous harvesting as part of a team project.
- Built an automated tissue-handling system on the ALOHA robot using Action Chunk Transformers for reliable execution of autonomous packing.
- Implemented Action Chunk Transformer on a 7-DoF robotic arm to perform precise and adaptable pick-and-place operations.
- Researching diffusion models for efficient path planning and hierarchical decision-making in robotic manipulators. Exploring enhancements to Deep State Space Models by integrating time-varying state systems to improve SOTA.

Research Assistant(Part-Time) at Physical Intelligence Lab, Kyungpook National University *Sept 2022-Feb 2024*

- Acquired in-depth theoretical knowledge of control systems and gained the ability to apply them in practical scenarios. Acquired and enhanced programming expertise through hands-on projects in control theory, reinforcement learning, artificial intelligence and Robot Operating System (ROS).
- Key projects include:
- **Drone Control:** Enabled keyboard-based drone control with integrated object detection.
- **Drone Trajectory Tracking:** Developed algorithms for precise drone trajectory tracking using Model Predictive Control (MPC).
- **Leader-Follower Tracking:** Implemented iterative cost learning Model Predictive Control (ICLMPC) for leader follower tracking of TurtleBot robots.

Education

Kyungpook National University *Mar 2024 - Present*

- Masters in School of Electronics and Electrical Engineering
- Current CGPA : 4.22/4.3

Kyungpook National University *Mar 2022 - Feb 2024*

- Bachelor of Science in School of Electronics Engineering (Double Degree)
- CGPA : 3.96/4.3

Christ University *Aug 2019 - Dec 2021*

- Bachelor of Technology in Electronics and Communication Engineering
- CGPA : 3.94/4

Skills

Technical Skills		Soft Skills
Python	Gazebo, Isaac Sim	Problem-solving
C-language	CUDA	Creative thinking
Matlab	YOLO	Time Management
PyTorch	ROS , Linux	Communication Skill
TensorFlow	HTML, CSS	Teamwork

Projects

- Behaviour cloning on Franka Robot
- Fuzzy Based Vehicle Platooning
- Smart Home using Internet of Things(IoT)

Publications

Title	Journal/Conference	year
Discrete Latent Diffusion Motion Planning	Nodycon(Conference)	2025-Jun
Vision-Guided Imitation Leaning using ACT	IEMEK(Conference)	2024-Nov
Imitative Precision	KNUEERC	2024-Jul