Ankit Kumar Shaw

M.Sc. Graduate | Robotics & AI Enthusiast

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Summary

Graduate student researching Embodied AI with a focus on Autonomous Driving, Haptic shared Robot Learning, and Multimodal LLMs. Passionate about building context-aware robotic agents that collaborate with humans through language and touch to solve complex manipulation tasks.

Education

School of Vehicle and Mobility, Tsinghua University — **Sep 2020 - Dec 2024**
Mechanical Engineering — Master of Science
3.87/4.0, Rank: 5th

Thesis: **"Multimodal LLM based Data Cleansing Model for Confidence Score driven Crowdsourced Data Fusion"** under Dr. Yang Diange in Autonomous Driving Lab.
[NB: Almost 2 years of study gap due Covid-19]

Vellore Institute of Technology — **Jul 2016 - Jun 2020**
Mechanical Engineering — Bachelor of Technology
8.78/10.0

Thesis: "**Investigation into the effects of Waste Plastic Oil in Biogas fuelled Dual-Fuel Engine**" under Dr. M. Feroskhan.

Experience

National University of Singapore — **Mar 2025 - Present**
Research Assistant

Visuo-Tactile based Robot Learning and Manipulation under Prof. Mike Shou at Show Lab in the School of Computing.

King Abdullah University of Science and Technology — **Jun 2022 - Dec 2022**
Remote Intern as well as Visiting Student — Saudi Arabia

Learned to implement simple Offline Reinforcement Learning models in different Mujuco Environment under Prof. Mohamed Elhoseiny at Vision-CAIR group in Visual Computing Center.

Tsinghua AI for Student Club (TAIS) — **2023 - 2024**
President — Tsinghua University

Actively participate in AI hackathons, debates, and global collaborations with university and industry teams in China, fostering a vibrant AI community through talks and panel discussions.

Future Robotics Club — **2022 - 2024**
Team Member — Tsinghua University

Design and develop the "Tinker" home-based indoor robot for RoboCup @home.

Manuscripts Reviewer — **IROS 2025, Hangzhou, China.**

Research Interests

Embodied AI, Visuo-Tactile based Robot Learning and Dexterous Manipulation, Human-Robot Interaction (HRI), Multimodal Sensing and Robot Perception, Multimodal Large Language Models, Autonomous Driving

Research Projects and Publications

ViTaMIn: Learning Contact-Rich Tasks Through Robot Free Visuotactile Manipulation Interface Aug 2024 - Jan 2025

Under review at RSS 2025.

Done in collaboration with UC Berkeley.

CleanMAP: Distilling Multimodal LLMs for Confidence-Driven Crowdsourced HD Map Updates Feb 2024 - Dec 2024

Accepted at the Workshop on Distillation of Foundation Models for Autonomous Driving (WDFM-AD) at CVPR 2025.

Advancing Autonomous Vehicle Intelligence: Deep Learning and MLLM for Traffic Sign Recognition and Robust Lane Detection Feb 2024 - Feb 2025

Under review at ICCV 2025.

Stereo Camera based Object detection at different depths and performing Pick and Place Task at specific Bin using the 7 DoF Robotic Arm Sep 2023 - Jan 2024

Machine Vision course final project

A Privacy-Preserving Data Storage and Service Framework Based on Deep Learning and Blockchain for Construction Workers' Wearable IoT Sensors. 2022

https://arxiv.org/pdf/2211.10713.pdf

Skills

Programming & Frameworks: Python, C++, PyTorch, CUDA, TensorFlow, OpenCV

Robotics Tools: ROS, Gazebo, MoveIt, RViz

Collaboration & Development: Git, Docker, Linux, Jupyter, VS Code, Github

AI & ML Tools: Deep Learning, Imitation Learning, LLMs, VLMs

Robotics Tools: ROS, Gazebo, MoveIt, RViz

Additional Tools: Open3D, Scikit-learn, Matplotlib, NumPy, Pandas

Achievements

Best Solution Award 2022
AWS Disaster Response Hackathon

Second Class Meritorious Scholarship (英才二等奖学 金) Oct 2021
Tsinghua University

Awarded for having excellent overall academic records

Chinese Government Scholarship Sep 2020 - Jun 2024
Tsinghua University

Fully Funded Master's Study Scholarship

Languages

English

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Chinese

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