Shailendra Sekhar Bathula

Hyderabad, India · +91 98499 13218 · shailendrasekhar.bathula@gmail.com
linkedin.com/in/shailendrasekhar · shailendrasekhar.github.io

SUMMARY

Robotics and machine learning researcher since 2021, spanning reinforcement learning, robotic manipulation and autonomous driving. Pairs generative modeling research with hands-on systems engineering, building complete ROS 2 robotic systems from perception through motion planning and control. Published at ICRA 2026.

EDUCATION

Ph.D., Computer Science Jul 2026 – Present
IIIT Hyderabad (Advisor: Prof. K. Madhava Krishna), Hyderabad, India

M.S., Artificial Intelligence Aug 2024
University of Georgia, Athens, GA, USA

B.Tech., Electronics and Communication Engineering Apr 2019
Gandhi Institute of Technology and Management (GITAM), Hyderabad, India

TECHNICAL SKILLS

Languages: Python, C/C++

Frameworks: PyTorch, TensorFlow, OpenCV, ROS 2, MoveIt 2, Nav2, Gazebo

Specializations: Generative AI, Computer Vision, Reinforcement Learning, Motion Planning, Autonomous Driving

EXPERIENCE

PhD Researcher Jul 2026 – Present
Robotics Research Center, IIIT Hyderabad, Hyderabad, India

- Rethinking autonomous driving across the stack, from perception to planning, control and end-to-end learning, with generative world models of how driving scenes evolve.
- Building computational and mathematical models of driver behavior and road-user psychology, so that autonomous systems can anticipate how people actually drive.
- Co-developing an autonomous driving software stack for a car from the ground up.

Young Research Assistant Dec 2024 – Jul 2026
iHub-Data, IIIT Hyderabad, Hyderabad, India

- Built a brain-controlled assistive robotic arm for healthcare, implementing the full ROS 2 (Humble) stack across perception, planning, control and actuation for BCI-driven autonomous pick-and-place.
- Trained Mamba selective state space models to decode EEG signals and map user intent to object selection.
- Developed object detection, pose estimation and point-cloud pipelines fused with arm actuation to infer object pose, dimensions and grasp points; built a real-time motion planner for obstacle-free arm trajectories.

Graduate Research Assistant Jan 2024 – Aug 2024
Heterogeneous Robotics Lab, University of Georgia, Athens, GA, USA

- Developed **Imitation-BT** (ICRA 2026), which distills deep RL policies (DQN, PPO, A2C) into interpretable behavior trees through interactive imitation learning with a decision-tree learner and expert feedback loop.
- Designed an action template library and logic minimization pipeline that compiles learned rules into compact, verifiable behavior trees.
- Retained up to 100% of expert performance with roughly 10× fewer nodes than prior behavior tree synthesis, across seven Gymnasium environments and a robot package delivery simulation.

Data Science Intern May 2019 – Jun 2019
National University of Singapore, Singapore

- Built a news-driven stock forecasting pipeline combining NLP keyword detection and sentiment analysis with a CNN–LSTM model that predicts market opening values from daily headlines.

PUBLICATIONS

S. S. Bathula, R. Parasuraman. *Imitation-BT: Automating Behavior Tree Generation by Echoing Reinforcement Learning Agents.* IEEE International Conference on Robotics and Automation (ICRA), Vienna, 2026.