KSHITIJ PRASAD

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Robotics engineer building autonomy systems that solve real-world problems. Driven by addressing the 1.35 million lives lost and 70 billion hours wasted in traffic annually. Strong in Python, ROS2, Git, and field robotics.

EXPERIENCE

09/2025 - Present
AKKODIS | Abschlussarbeit | Ingolstadt, Bavaria
- Fiducial-assisted deep **Reinforcement Learning** for **UAV** landing on moving platforms; **PX4 SITL** benchmarked against **QGroundControl.**
- **Reinforcement Learning** algorithms such as **TD3, PPO, SAC** benchmarked against native controllers and with each other in evaluation.
- Used **Isaac Sim domain randomization** + **Gazebo SITL** to close sim-to-real gaps; measured latency/jitter and packet loss; iterated policies from traces, Built **ROS 2 ↔ MAVLink ↔ PX4** SITL control/telemetry loops
- Tools/Techniques: **ROS 2, Reinforcement Learning, Deep Learning**, PX4 SITL, **MAVLink, MAVSDK, QGC, Python/C++**, rosbag2, **colcon, Docker (dev).**

03/2025 - 09/2025
AKKODIS | Werkstudent | Ingolstadt, Bavaria
- Bridged **ROS 2** Humble with **CARLA (ros-bridge)** to stream synchronized RGB/depth/LiDAR to a Nav2 autonomy stack; automated 15+ critical scenarios and trimmed integration time ~40%.
- Established structured logging and **DDS QoS** settings for reliable dataflow in simulation.
- Tools: **ROS 2, CARLA, Nav2, TF/frames**, message filters, **rosbag2, Git**.

10/2024 - 03/2025
AKKODIS | Praktikum | Ingolstadt, Bavaria
- Integrated a ROS 2 service-giveaway robot with **Nav2** (controllers, perception, **trajectory planning**).
- Built real-time perception with Intel RealSense + **YOLO**; triggered custom Nav2 behaviors/trajectories.
- Developed **ROS 2 plugins** for use-case-specific capabilities; maintained code quality, reducing downtime ~15%.

04/2024 - 10/2025
AKKODIS | Werkstudent | Ingolstadt, Bavaria
- Autonomous navigation on **TurtleBot3** with **ROS 2, Nav2, RealSense**; improved **exploration/path planning**.
- Collaborated on **SLAM/EKF** integration; aligned simulation with real robots to streamline delivery.

EDUCATION

03/2022 - 03/2026
Technische Hochschule Ingolstadt | Bachelor Autonomous Vehicle Engineering | Ingolstadt, Bavaria
Focus: Robotics, Signal Processing, Control Theory, Sensor Fusion.
Activities: Schanzer Formula Student Race Club; Hochschule Gaming e.V. Ingolstadt.
GPA: 2,3

ACHIEVEMENTS

• Winner, **PAVE Conference Next Gen Challenge** | Brussels, Belgium | 2025
  Selected as 1 of 3 finalists across Europe; presented RL-based AV deployment
  optimization platform at international mobility conference, winning the Challenge.
@ Autonomous Orchestrator

PROJECTS

Schanzer Racing e.V. | Driverless Department | 10/2022 – 10/2024 (Formula Student Racing team at TH Ingolstadt)
Worked with MATLAB, C++, ROS 2, JETSON and Foxglove on differential drive robotics; selected LiDAR solutions and handled component budgeting.

AI&MORE | Pixel Park | Hackathon | (LiDAR Parking Detection) | 11/2023
Built LiDAR-based parking spot detection and mapping to reduce search time/CO2; won the Sustainable Solution Award.

SKILLS

Robotics: ROS 2, Reinforcement Learning, Nav2, TF, URDF/Xacro, rosbag2, message filters
Simulation: CARLA, Gazebo/Ignition, Isaac Sim, MATLAB
Sensors: Intel RealSense, LiDAR, IMU, GNSS; Time sync (NTP/Chrony), ADMA, calibration, correct frames
Build & Tooling: colcon, CMake, Docker/containers, Git/GitHub/GitLab, CI/CD, JIRA

Autopilot & Protocols: PX4 (modes/params/SITL), MAVLink (HEARTBEAT, PARAM, MISSION, ATTITUDE, telemetry), MAVROS/MAVSDK, QGroundControl (QGC)
Platforms: Ubuntu 24.04/22.04, Raspberry, JETSON, systemd, bash
Languages: Python, C++
Soft Skills: Independent, Analytical and Critical Thinking, Team Player, Confident, Supportive

LANGUAGES

- **English (Native)**
- **German (B2)**