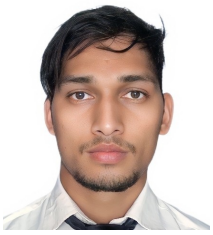

HARI SHARAN DANGI

Robot Learning & Motion Planning | Simulation | Hardware & CAD

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Portfolio | GitHub
LinkedIn

Enrolled M.Sc. Mechatronics student applying for the Intelligent Mobile Manipulation internship. I have been combining learned policies (deep RL, imitation learning) with classical motion planning and control, validated in NVIDIA Isaac Sim, and ROS/Gazebo. A mechanical-engineering and CAD / 3D-printing background means I can also contribute to hardware integration and handle robot hardware responsibly. Good English, self-driven, and keen to work hands-on with real mobile manipulators.

Availability: enrolled student, 39 h/week, onsite in Heilbronn (open to relocating); interested in continuing with a master's thesis afterwards.

Skills

Learning-Based Robotics
Deep RL (TD3, DDPG, PPO, SAC), imitation learning, vision-language-action (VLA) / foundation-model familiarity, sim-to-real / domain randomization, PyTorch

Physics Simulation
NVIDIA Isaac Sim / Lab, MuJoCo, Gazebo, RViz, Weights & Biases

Programming & Tools
Python (PyTorch), C++, C, MATLAB; Git, Linux, Docker, OpenCV

Robotics & Motion Planning
ROS / ROS 2, motion planning (Dijkstra / A* + local planning), kinematics & inverse kinematics (IK), 3D transformations, SLAM, GMapping, LQR, PID, URDF / Xacro

Hardware & CAD (prototyping)
SOLIDWORKS, CATIA, Ansys; 3D printing (FDM, SLA, DMLS); sensor / actuator integration; custom mounts & demo setups; responsible hardware handling

Languages
English (fluent, professional), German (A2, improving), Nepali (native), Hindi (conversational)

Education

Master's in Mechatronics and Cyber-Physical Systems (enrolled) — Mar 2025 – 2027 (expected)
Deggendorf Institute of Technology — *Cham, Germany*

- Current grade: 1.8 (German scale) | 65 ECTS completed.

Bachelor in Mechanical Engineering — Dec 2018 – Aug 2023
Tribhuvan University, Pashchimanchal Campus — *Pokhara, Nepal*

- First Division: 76.68%. Full Government of Nepal merit scholarship.

Relevant Projects

Goal-Driven Autonomous Exploration Using TD3 Deep Reinforcement Learning — 2026
Intelligent Robotics Lab, Technische Hochschule Deggendorf

- Built a TD3-based learned navigation policy in Gazebo with curriculum learning and reward shaping for goal-reaching and obstacle avoidance; open-sourced.

Mobile Robot Navigation Using a Dijkstra Global Planner and a Local Planner — 2025
ROS, Gazebo, RViz, GMapping

- Built a classical motion-planning stack (Dijkstra global planner, obstacle-avoidance local planner, velocity controller) with GMapping, alongside the TD3 work above, gives me hands-on experience combining learned policies with classical motion planning.

Integrated SLAM-Based Navigation and LQR Stabilization of a Self-Balancing Robot — 2025
ROS Noetic, Gazebo, SolidWorks, Simulink, URDF

- Designed and tuned an LQR controller in MATLAB/Simulink and integrated it with SLAM-based navigation in ROS/Gazebo, control and coordination experience relevant to whole-body control.

Servo-Cam Gripper for Minimally Invasive Spine Surgery — 2026
Additive manufacturing & mechatronic end-effector design

- Engineered a compact, 3D-printed Ti-6Al-4V gripper (manipulator end-effector) operating within a strict $\leq$12 mm channel, direct hardware-integration, CAD, and 3D-printing experience.

TextoCAD: Text-to-CAD Web Application 2026 – Present

Independent software / CAD-automation project

- Building a pipeline that converts natural-language prompts into validated CAD JSON with STEP/STL/GLB and robot URDF/Xacro export, via an agentic LLM workflow.

Experience

Mechanical Design Engineer Apr 2023 – Sep 2023

National Innovation Center *Kathmandu, Nepal*

- Designed and optimized biomedical devices and a CFD-tested medical-delivery drone, from concept to prototype, full hardware design-to-build workflow.

Mechanical Instructor Dec 2023 – Feb 2025

Balaju School of Engineering & Technology *Kathmandu, Nepal*

- Taught mechanical, mechatronics, and biomedical engineering subjects with hands-on lab training.

Founder & Managing Director May 2023 – Mar 2025

GadiDokan Pvt. Ltd. *Kathmandu, Nepal*

- Founded and ran an online used-vehicle business; led a small technical team across inspection, repair, and digital operations.

Publications

- H. S. Dangi et al., *"Design and Fabrication of an Electrical Glider…"*, J. of Innovations in Engineering Education.
- H. S. Dangi et al., *"Design, Construction, and Setup of a Low-Speed Open-Circuit Wind Tunnel"*, J. of Academic Research in Engineering and Sciences.

Awards & Leadership

- Full Government of Nepal scholarship + UGC merit award (monthly stipend). 2018 – 2023
- NAST Young Scientist Research Sponsorship (medical-equipment delivery drone). 2023
- Founding Member & Technical Head, SEDS-WRC. 2022 – 2023