

Gunjan Giri

Linkedin: <https://www.linkedin.com/in/gunjan-giri/>

Github: <https://github.com/GunjanGiri>

Twitter: <https://twitter.com/GiriGujju>

LeetCode: <https://leetcode.com/GunjanGiri/>

Website: <https://gunjangiri.github.io/>

Youtube: https://www.youtube.com/channel/UC_C6OVuEzJgYze0wCzNUSQ

Email : gunjangiri8410@gmail.com

Mobile : +91-9078687656, +91-7978909955

EDUCATION

- **Birla Institute of Technology And Science, Pilani** Pilani, India
M.Tech in Software Systems *July 2024 - Ongoing*
- **Odisha University of Technology and Research** Bhubaneswar, India
B.Tech in Electronics and Instrumentation Engineering; CGPA: 9.11 *Aug 2018 - May 2022*
Technical Co-ordinator of Zairza: The Technical Society of OUTR College
- **Dr. A.N.K DAV Public School** Rourkela, India
Higher Secondary in PCMB; Percentage: 82.4 *June 2016 - April 2018*
- **Chinmaya Vidyalaya(E.M)** Rourkela, India
Secondary in Science; Percentage: 90.2 *April 2015 - Feb 2016*

SKILLS SUMMARY

- **Languages:** C++, C++14, C++17, Python, Embedded C, Unix scripting, MATLAB
- **Frameworks and Tools:** ROS, ROS2, Pytorch, Tensorflow, Onnx, TensorRT, Arduino, OpenCV, Keras, Embedded Systems, CUDA, GIT, JIRA, BitBucket, XCode, VsCode, Carla, UnrealEngine, DOORS, Kafka, Agile, DevOps, Autosar
- **Algorithms:** Mapping, Localization, Planner, Behaviour, Controller, SLAM, Perception, Sensor Fusion, Path Planning, Intention Prediction, Visual SLAM
- **Learning Based Approaches:** Deep Learning, Machine Learning, Computer Vision, Artificial Intelligence, LLM's, RAG Models, Multi agent system
- **Sensors and Development Boards Used:** Monocular Camera, Stereo Camera, Pinhole Camera, Fisheye Camera, Lidar, Ultrasonic Sensor, Depth Camera, IMU, Wheel Encoders, Automotive Sensor, Arduino Uno, Arduino Mega, ESP32, Raspberry Pi, Jetson Nano, Eagle One-O-One, Tensor Boards, Cuda Drivers, Zed Cameras

EXPERIENCE

- **Bosch Global Software Technologies** Bengaluru, India
Software Engineer *Jan 2024 - Current*
 - **Autonomous Vehicle Development and ADAS Integration:**
 - Developed an autonomous buggy with a focus on parking and ADAS features, implementing L3 and L4 automation using ROS, lidar, and camera sensors.
 - Worked on NRCS parking chip hardware, contributing to vehicle automation and autonomous driving.
 - Designed and implemented adaptive cruise control using camera perception for low-speed operation.
 - Developed scenarios for intention prediction and path planning, including avoidance and nudgeability for L2+ functions.
 - Worked on monocular per-pixel depth estimation for fisheye and pinhole cameras using learning-based techniques.
 - Specialized in Visual SLAM, utilizing learning-based and traditional methods with fisheye, pinhole, and stereo cameras.
 - Enhanced Zed Camera SDK with improved object detection, mapping, and relocalization.
 - Calibrated and debugged ADAS sensors, including cameras, lidar, and steering systems.
 - Developed a 360-degree parking map and implemented a Surround Image System for parking slot detection using NRCS cameras.
 - Contributed to a wide range of ADAS and parking features, assisting the team in overcoming complex challenges.
- **Associate Software Engineer** July 2022 - Dec 2023
 - **ADAS and Parking Features for Autonomous Buggy:**
 - Developed ROS packages for wheel-based odometry and integrated IMU data to create wheel-IMU odometry.
 - Contributed to sensor fusion for localization, Visual SLAM, and Visual Odometry.
 - Extensively used Carla to generate ground truth, simulations, and trajectories for AD operations.
 - Developed packages for obstacle avoidance and object visualization within specific areas of interest.
 - Worked on Lidar preprocessing, including upsampling and downsampling, for ground truth generation and AD tasks.
 - Built a perception pipeline using Mono-NRCS cameras for image segmentation, semantic segmentation, distortion correction, bird's-eye view, and 2D/3D object detection.

- **Quin** Hyderabad, India
Embedded Software Developer Intern *March 2022 - June 2022*
 - **Schematic Design:** Developed the schematics for their cycling and motorcycle helmets.
 - **SDK and Protocol:** Worked on ESP SDK and integrated BLE Protocol for service read/write functionality.
 - **Sensor:** Designed and implemented motion sensors (MPU9250, MPU6050) and NFC chipsets.
- **Accio Robotics** Bengaluru, India
Robotics Software Developer Intern *Aug 2021 - Feb 2022*
 - **Product Development and Algorithm Optimization:**
 - Conducted research to refine algorithms and ensure robustness for both new and existing products.
 - Participated in planning and docking algorithm implementation, utilizing mapping and localization for smooth robot docking.
 - Experienced in working with various sensors and implementing code on microcontrollers for embedded systems.

ACADEMIC PROJECTS

- **Visual Follow Line (JdeRobot, GSoC 2021):** Implemented a PID algorithm for a robot to autonomously follow a line, completed for the Robotics Academy as part of Google Summer of Code.
- **Home Service Robot:** Developed a bot capable of autonomous navigation and task execution using path planning and SLAM algorithms.
- **Amazon Robotics Challenge(2016):** Integrated a complete robotic system for pick-and-place operations in a factory setting using state machines.
- **ReRo (Smart India Hackathon Finalist):** Built a disaster management robot using OpenCV and SLAM mapping for accelerated rescue efforts.
- **Self Driving Car:** Applied OpenCV for lane detection, deep learning for behavior cloning, and a PID controller for path correction.
- **Sahayak Bot (IIT Bombay):** Enabled warehouse robot arm manipulation and SLAM-based navigation for efficient task handling.

COURSES AND CERTIFICATIONS

- **Computer Vision MasterClass:** Udemy (March '24)
- **Autosar Architecture:** Udemy (Sept '23)
- **Advanced Driver Assistance System(ADAS):** Udemy (May '23)
- **Automotive Camera:** Udemy (Feb '23)
- **Data Fusion with Linear Kalman Filter:** Udemy (Oct '22)
- **DSA using Python:** NPTEL (December '20)
- **Robotics Specialization:** Coursera (Sept '20)
- **Self-Driving Car Specialization:** Coursera (Sept '20)
- **Deep Learning Specialization:** Coursera (July '20)
- **Flying Car and Autonomous Flight Engineer NanoDegree Program:** Udacity (July '20)
- **Self-Driving Car NanoDegree Program:** Udacity (June '20)
- **Robotics Software Engineer:** Udacity (May '20)
- **Algorithmic Toolbox:** UCSan Diego (April '20)

HONORS AND AWARDS

- **Awarded Employee of the Year for innovative contributions in camera systems**
- **Achieved 3 star in Problem Solving and 5 star in C++ on HackerRank; 2 star Coder on CodeChef**
- **Ranked in the top 30 teams at Reva University Hackathon for a smart app managing mall crowds, and in the top 32 teams at the GE Healthcare Hackathon for data science in healthcare**
- **Winner of Hack Fest 2.0, leading to selection for SIH 2020**