

DAVID NORONHA

Computer Science Student & Robotics Enthusiast

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EDUCATION

- Vellore Institute of Technology** Chennai Campus
B.Tech Electronics & Computer Engineering, CGPA: 8.61/10 Aug 2023 – Present
 - Coursework: Control Systems, Microprocessors & Microcontrollers, Signal Processing, Embedded C Programming, Complex Variables & Linear Algebra
 - Clubs: Google Developer Group, IEEE Robotics & Automation

EXPERIENCE

- Robotics Intern** Pune, IN
Muks Robotics AI Pvt. Ltd. Jul 2026 – Present
 - Training **reinforcement learning** policies (PyTorch) for **pick-and-grasp manipulation** on SO-101 robotic arms and **bipedal locomotion** on a humanoid platform.
- Robotics Software Intern** Pune, IN
ERIC Robotics May 2026 – Jun 2026
 - Built a **zero-copy sensor pipeline** using **iceoryx** shared memory, transporting Lucid camera & MechMind depth frames to segmented **MCAP** files on Jetson AGX Orin.
 - Developed a **point cloud change detection** tool in C++ (**PCL** octree + **small_gicp** ICP) to detect foreign objects on runways by comparing registered LiDAR scans.
- Robotics Software Intern** Remote
Coratia Technologies May 2025 – Aug 2025
 - Built a **Godot-based** vehicle URDF & simulation editor, integrated with Stonefish, ROS, and Ardupilot SITL.
 - Enabled rapid reconfiguration of thrusters & sensors, improving test coverage by **30%** and reducing simulation setup time by **40%**.
- Programming and Analysis Head** VIT Chennai
Dreadnought Robotics Apr 2025 – Present
 - Led a **20-person** team; directed **planning, control & simulation** development, placing **2nd at TAC Challenge Norway 2024** among 25 international teams.
 - Tuned autonomy stack for competition readiness; secured consecutive **SAUVC qualifications** (2025, 2026) and won **Innovation Award at SAUVC 2026**.
 - Applied **DOPE** and trained **YOLO** models for object detection, deploying inference on Jetson platforms for real-time perception.

PROJECTS

- Project Mira – Autonomous Underwater Vehicle (TRL5)** Oct 2024 – Present
 - Built **behavior tree** autonomy in C++/ROS2 with PID motion primitives for gate traversal, ArUco docking, and object approach.
 - Integrated **ZED 2i** with **ArduSub GUIDED mode** via MAVROS VIO, fusing stereo odometry into Pixhawk **EKF3** for GPS-denied underwater waypoint navigation.
- Androidino: Embedded Workloads on Android Devices** Aug 2024 – Sep 2024
 - Published as a **research paper** demonstrating Arduino code execution on Android as a low-cost, sustainable IoT alternative.
 - Achieved **3× faster execution** of embedded workloads using repurposed smartphone CPUs via the Linux-based Android kernel.
- Autonomous Maze Solving Robot | Dreadnought Robotics** Sep 2024 – Oct 2024

- Tuned PD controller for precise line tracking (<2.5cm deviation); implemented A* and Left-Turn-First search algorithms.
- Used Arduino Uno, Mega, ESP32 with Pololu 16RC sensor array and N20 motors.

SKILLS

- **Programming Languages:** Python, C/C++, Embedded C, Java, MATLAB
- **Robotics & Frameworks:** ROS, ROS2, MAVLink, ArduSub, Nav2, QGroundControl
- **Vision & ML:** YOLO, DOPE, TensorRT, OpenCV, PyTorch, Reinforcement Learning
- **Simulation & Tools:** Gazebo, Stonefish, RViz, URDF/SDF Modelling, Git, Docker
- **Embedded Platforms:** Jetson AGX Orin, Jetson Xavier, Raspberry Pi, STM32, BeagleBone