PRANESH G A

Robotics Software & Autonomous Systems

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PROFILE SUMMARY

Mechatronics Engineering student (Class of 2029) building robotics software, machine vision systems and embedded hardware. Contributed to DD Robocon across software, electrical and mechanical integration. Built OpenCV inspection software, a two-layer STM32 maze-solver board with a teammate, and a six-axis robot simulation tool. Interested in autonomous mobile navigation, SLAM, perception and AI for robotics.

COMPETITIONS & ACHIEVEMENTS

- **DD Robocon India 2026 National Finals:** Participated with TeamBIT; worked across robot software, electrical systems and mechanical integration.
- **e-Yantra Robotics Competition 2026-27:** Team eYRC#3809 earned 100/100 on Strata Cobot Tasks 0 and 2 and PacBot Task 1; task results are team scores, with the competition ongoing.
- **Smart India Hackathon:** Participated on problem statement 26039; project documentation forthcoming.

EDUCATION

Bannari Amman Institute of Technology *Expected Graduation: 2029*

B.E. Mechatronics Engineering | 2025-2029 | CGPA: 7.75/10

TECHNICAL PROJECTS

Custom STM32 Maze-Solver Board | Two-Layer PCB

- Collaborated with Pranesh S on a custom STM32 board for a maze-solving robot; fabricated and assembled the two-layer prototype with motor-driver and connector interfaces.

Conveyor Ring Inspection & Tracking | Python, OpenCV, Flask

- Built a vision pipeline for ring detection, temporal tracking and direction-aware counting, with an Orbbec camera adapter and Flask dashboard. View source.

Robocon 2027 Team Workspace & Arena Study | Next.js, Supabase, Three.js

- Developed a team workspace for work logs, maintenance, meetings and files, plus an interactive arena study for competition preparation. View source.

Trace Axis Studio | Six-Axis Robot Simulation Software

- Built a browser-based tool for CAD inspection, joint motion, keyframe playback and kinematic path exploration. View software.

ADDITIONAL SOFTWARE

- **Ganapathy Engineering Works billing:** Built a Flask application covering invoices, customers, stock, payments and reports. View source.
- **Sashtii Designer Boutique:** Built a React frontend for collection browsing, quote and appointment forms, customer screens and admin layouts. View source.

TECHNICAL SKILLS & TOOLS

- **Robotics & programming:** Python, ROS 2, Jetson Nano, Raspberry Pi, ESP32, Arduino
- **Computer vision & AI:** OpenCV, YOLO, PyTorch, object tracking
- **Electronics & PCB:** STM32, KiCad, EasyEDA, two-layer PCB design and assembly
- **Software:** Flask, React, Next.js, Supabase, Git, GitHub