

DIVYANSH SACHDEV

AI Developer | Artificial Intelligence + Robotics | Computer Vision & Embedded AI

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PROFESSIONAL SUMMARY

AI and Robotics engineer building applied AI across embedded hardware and full software stacks — computer vision, autonomous systems, and machine learning. Founded and led **Shunya** (2023–2025), an AI & robotics engineering studio delivering 30+ projects spanning combat robotics, autonomous systems and embedded AI wearables. Currently a Frontend Engineer at **Paysecure**. Competed in 97 national and international robotics/AI events with 35 outright wins and 58 podium finishes, including podiums at IIT Delhi, IIT Madras, IIT Indore, IIIT Delhi and NIT Surathkal. Author of two published papers, including one presented at IEMECON 2025 (IEEE).

TECHNICAL SKILLS

Programming Languages:	Python, C++
Machine Learning / Deep Learning:	PyTorch, TensorFlow, Scikit-Learn
Computer Vision:	OpenCV, YOLO
Robotics & Embedded Systems:	ROS2, ESP32, Arduino, Raspberry Pi, Embedded C/C++
Edge AI / TinyML:	TensorFlow Lite Micro, Edge Impulse, INT8 Quantization
Backend & Tools:	FastAPI, Docker, REST APIs, Git, GitHub

PROFESSIONAL EXPERIENCE

Frontend Engineer | Paysecure

2025 – Present

- Building and maintaining production frontend systems.

Founder | Shunya

2023 – 2025

- Founded and led an AI and robotics engineering studio, delivering 30+ projects spanning combat robotics, autonomous systems and embedded AI wearables.
- Designed control firmware for competition robowar robots across 8kg, 15kg and 30kg weight classes — interrupt-driven RC signal capture, differential drive mixing and a 300ms hard failsafe — campaigned at IIT Delhi, IIT Madras, DTU, MNIT, COEP and PEC.
- Built embedded biomedical wearables including real-time ECG QRS detection, PPG-based heart-rate/SpO₂ estimation, and two-stage IMU fall detection, running fully on-device with no cloud dependency.
- Led teams through 90+ national and international robotics/AI competitions, converting 35 into outright wins.

SELECTED PROJECTS

AI PPE Safety Detection Pipeline | Python, PyTorch, YOLOv11, OpenCV, FastAPI, Docker | [GitHub](#)

- Real-time PPE compliance pipeline with multi-threaded OpenCV capture and CUDA-accelerated YOLOv11 inference, exposed as a FastAPI service.

Enterprise GenAI RAG Knowledge Engine | Llama 3 8B, LangChain, ChromaDB, FastAPI | [GitHub](#)

- Self-hosted retrieval-augmented generation engine for document Q&A — local embeddings, vector search and streaming responses with zero external API dependencies.

Combat Robot ESP32 Controller | ESP32, C++, RC PWM, Brushless ESC | [GitHub](#)

- Competition robowar firmware for 8/15/30kg classes — differential drive mixing, dedicated weapon-channel arming and a 300ms link-loss failsafe.

CardioVision AI Band | ESP32, AD8232, Embedded C++ | [GitHub](#)

- Wearable ECG band performing real-time on-device QRS detection and heart-rate/rhythm flagging.

Edge AI Object Detection on ESP32-CAM (TinyML) | TensorFlow Lite Micro, C++, ESP32, INT8 Quantization | [GitHub](#)

- Standalone object detection on ESP32-CAM using an INT8-quantized TFLite Micro model running in an 80KB static tensor arena — no cloud round-trip.

HONORS & ACHIEVEMENTS

90+ national & international robotics/AI competitions — 97 events entered, 35 outright wins, 58 podium finishes

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| • 1st Place – IIIT Delhi | • 1st Place – Tinkerhub, IIT Indore |
| • 1st Runner-Up – HoverHurdle, IIT Delhi | • 1st Runner-Up – Micromouse, IIIT Delhi |
| • 2nd Runner-Up – Robowars 8kg, IIT Madras | • 2nd Runner-Up – NIT Surathkal |
| • 2nd Runner-Up – IIIT Nagpur | • 3rd Runner-Up – NIT Jalandhar |

PUBLICATIONS

- "TechniQuilt — A Framework for Web Developers", European Chemical Bulletin, Vol. 11, Issue 12 (2023) — DOI: 10.48047/ecb/2023.11.12.019
- "Smart Indoor Air Quality Monitoring Device with Automated Threshold-Based Control", IEMECON 2025, IEEE — DOI: 10.1109/IEMECON69302.2025.11365921

EDUCATION

Bachelor of Technology (B.Tech), Computer Science — Specialization in Artificial Intelligence & Machine Learning

University of Engineering & Management (UEM), Jaipur, India | 2021 – 2025