

Veerendra R Patil

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EDUCATION

National Institute of Technology Durgapur

B.Tech in Computer Science and Engineering; CGPA: 9.17/10

Durgapur, India

Aug. 2023 – May 2027 (Expected)

EXPERIENCE

AI Solution Architect & Technology Consultant

May 2026 – Present

Nautomation Labs

Bengaluru, India

- Architected and built a full-scale ERP system for industrial clients, delivering a lean, cost-effective alternative to legacy platforms like SAP
- Designed and built **decibyl.ai**, the company's flagship GenAI voice-agent platform, orchestrating voice campaigns, lead qualification, and follow-ups end-to-end via n8n-based workflow automation
- Single-handedly owned decibyl.ai's path to production: containerized the platform with Docker and shipped it live on AWS through a CI/CD release pipeline (GitHub Actions → ECR → EC2)

PROJECTS

Network Security – Phishing URL Detection | *Python, FastAPI, Docker, AWS, MLflow*

- Engineered an end-to-end MLOps pipeline that ingests, validates, and transforms phishing-site data, serving predictions through a FastAPI REST endpoint
- Trained and benchmarked five classifiers (Random Forest, Gradient Boosting, AdaBoost, and others) with GridSearchCV, tracking experiments via MLflow/DagsHub
- Automated deployment with a 3-stage CI/CD pipeline: GitHub Actions builds and pushes a Docker image to AWS ECR for release via a self-hosted EC2 runner

Edge AI Human Activity Recognition (IMU Time Series) | *PyTorch, TFLite Micro, ONNX, CUDA, Optuna, C++*

- Built an end-to-end deep learning pipeline classifying 16 human activities from dual-IMU time series; benchmarked CNN, CNN-LSTM, and CNN-GRU with Optuna search and CUDA/AMP training (up to 85.6% accuracy) using a leakage-free, segment-based splitting scheme
- Exported all models to INT8-quantized TFLite Micro via ONNX → TensorFlow with custom unrolled-RNN wrappers ($<1e-4$ deviation), and deployed them in C++ firmware running live inference on an ESP32-S3 with on-device benchmarking and OTA updates

Basketball Rim Detection & Distance Estimation | *Python, PyTorch, YOLOv5, OpenCV, CUDA*

- Trained a custom YOLOv5 model from scratch on a labeled dataset to detect basketball rims in real time on GPU
- Engineered a calibrated pixel-to-real-world distance formula to estimate rim distance from a single camera feed
- Built a real-time video pipeline overlaying bounding boxes, confidence scores, and distance, with annotated video export

TECHNICAL SKILLS

Languages: Python, C++, C, Dart, JavaScript, SQL, HTML/CSS

Machine Learning & AI: PyTorch, TensorFlow, Keras, Scikit-learn, OpenCV, YOLOv5, ONNX, Optuna, TFLite, CUDA

Backend & Cloud: FastAPI, REST APIs, Docker, AWS (EC2, ECR, S3), MLflow, CI/CD, GitHub Actions, MongoDB, MySQL, Firebase

Embedded Systems & Robotics: ESP32, ESP8266, Arduino, PID Control, IoT, WebSockets

Developer Tools: Git, Linux, VS Code, PySide6, Flutter

LEADERSHIP

CCA RoboCell Head

Feb 2024 – Present

National Institute of Technology Durgapur

Durgapur, India

- Led software and embedded systems development for RoboCell, shipping in-house tools including the Robozido app (Flutter + ESP8266)
- Drove RoboCell's Robocon 2024 sponsorship campaign and organized multi-college skill-development workshops, together generating INR 8L+ in funding and revenue for the club

ACHIEVEMENTS

Robocon Finalist, IIT Delhi (2025) – Led embedded/software development and built the computer vision model for rim detection on a competition robot

99.23 Percentile, JEE-Mains 2023 | Rank 66, KCET 2023