

# VIKRAM KHARVI

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Bangalore  
Karnataka, India

## PROFESSIONAL SUMMARY

Electronics & Instrumentation Engineering student with specialized focus on AI/ML applications in embedded and automotive systems. Combines instrumentation expertise with computer vision and machine learning to develop intelligent sensor systems. Experience in ADAS development, edge AI deployment, and real-time embedded applications. National finalist in innovation competitions with proven ability to integrate AI algorithms with hardware systems.

## EDUCATION

### JSS Academy of Technical Education-Bangalore

Bangalore

Bachelor of Engineering – Electronics & Instrumentation Engineering

Dec 2022 – May 2026

Relevant Coursework: Digital Signal Processing, Embedded Systems, Digital Electronics, Analog Electronics, Microprocessors, Control Systems, Instrumentation, Data Structures and Algorithms

### Excellent PU College, Sunnari

Udupi, Karnataka

PCMB

Jun 2019 – Apr 2021

## WORK EXPERIENCE

### Dots Autonomous

Bangalore

Artificial Intelligence Intern

Jan 2025 – Jul 2025

- Developed ADAS features using YOLO object detection and DPT-Hybrid depth estimation for real-time vehicle safety.
- Built algorithms for Time-to-Collision (TTC), braking distance, and velocity estimation from roadside camera feeds.
- Implemented low-latency bounding box overlays with live speed/distance visualization for automotive applications.

### CSIR-NAL

Bangalore

Research Project Intern

Feb 2025 – Mar 2025

- Developed Low-Velocity Impact Localization system using STM32 H563ZI and 4 piezoelectric sensors with <2cm positioning accuracy.
- Configured high-speed ADC sampling at 1 MSPS and implemented TDOA-based signal processing algorithms achieving 95%+ detection rate.
- Trained and deployed TinyML model (98KB) for real-time on-device impact prediction with 96% accuracy and <10ms inference time.

## PROJECTS & ACHIEVEMENTS

### National Finalist – Smart Glove for Sign Language Translation

Greater Noida, UP

STMicroelectronics Contest

Sep 2025

- Built intelligent wearable device translating sign language to real-time speech using ML and embedded systems.
- Integrated flex sensors, accelerometer, Arduino Nano, and STM32 Nucleo-144 for gesture recognition.
- Top 25 finalist out of 2,500+ teams in national AICTE innovation contest.

### Autonomous Navigation Rover with Computer Vision for Search and Reconnaissance

Jul 2025 (Ongoing)

- Developing edge AI system on NVIDIA Jetson Nano integrating computer vision and embedded sensor processing for autonomous reconnaissance.
- Implementing YOLOv5 object detection with real-time inference optimization and embedded SLAM algorithms for navigation.
- Designing embedded control architecture with sensor fusion (TF Luna LiDAR + 8MP camera) and real-time data processing pipeline.

## PUBLICATIONS

Co-Author – “Unlocking the Future of Highly Automated Vehicles: Challenges & Innovations”, Dots Autonomous

Jul 2025

## TECHNICAL SKILLS

Programming Languages:

Python, C/C++, Embedded C, Verilog

AI/ML & Computer Vision:

Machine Learning, YOLO, OpenCV, TinyML, Edge AI,

Embedded Systems:

STM32, Arduino, FreeRTOS, IoT

Hardware & Protocols:

NVIDIA Jetson Nano, STM32 Nucleo-144, LiDAR, UART, SPI, I2C

Development Tools:

STM32CubeIDE, Arduino IDE, Git, MATLAB

Automotive:

ADAS, Autonomous Vehicles, Sensor Fusion