

# Yash Tiwari

8369087569 | yashtiwari9182@gmail.com | THANE, Maharashtra

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## Skills

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- **Programming Languages:** Python, C++, C
- **Robotics & Embedded Systems:** ROS, Arduino, Raspberry Pi, Qt
- **AI & Computer Vision:** TensorFlow, PyTorch, scikit-learn, OpenCV, YOLOv8, Tesseract
- **Software & Systems:** FastAPI, Flask, Docker, Git, Linux, GCP

## Experience

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### Qoneqt

#### Software Engineer | 12/2025

- Developed a software verification agent to verify over 10k users daily
- Implemented a custom verification pipeline to enhance verification and data processing within seconds

### Qoneqt | Thane

#### Artificial Intelligence Engineer | 06/2025 - 09/2025

- **Architected and deployed a scalable Aadhaar authentication pipeline** serving 20,000+ users on a social media platform, implementing & raising verification accuracy from **28% to 95%** and reducing manual **review time by 80%**
- **Led cross-functional design discussions** with frontend, backend, and QA teams to architect NLP-to-automation pipeline, defining system requirements.
- **Deployed an LLM-powered mobile-app testing agent** with Ollama and Maestro across distributed Linux servrs, boosting CI pipeline throughput by **40%** and **detecting 3× more critical bugs pre-release**.

### Google Summer Of Code - SAT

#### Software Developer | 05/2025 - 09/2025

- **Architected high-performance real-time gesture processing system** for professional musicians and live performers, porting Paura Gestures Library to Avendish runtime with optimized C++ implementations achieving sub-millisecond latency for critical live performance scenarios.

### Stamp 'IT Robotai & Solutions Pvt. Ltd | Thane

#### Embedded Software Engineer | 03/2025 - 05/2025

- **Optimized deep learning inference pipeline** on resource-constrained Raspberry Pi hardware, achieving 30+ FPS YOLO object detection at 720p through model quantization, memory optimization, and efficient C++ implementation using TensorFlow Lite.
- **Built comprehensive Qt-based desktop CAD application** for complex manufacturing processes, integrating real-time camera calibration, visualization tools, and automated geometric optimization workflows, reducing deployment setup time by 50%.

## Project

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### Autonomous Car (Raspberry Pi)

- Developed a miniature self-driving car using **Raspberry Pi, Pi Camera, ultrasonic, and IR sensors** for perception and navigation.
- Implemented lane detection and obstacle avoidance with OpenCV and sensor fusion.
- Integrated real-time decision-making for path planning, achieving semi-autonomous driving in structured environments.  
**Tech:** Python, OpenCV, Raspberry Pi, Sensors (Ultrasonic, IR), Linux

### Aadhaar Processing API (Selected AI Project)

- Architected a high-performance document processing system with Redis-based model caching and distributed memory management.
- Automated Aadhaar card detection using **YOLOv8 + multilingual OCR**, achieving 95%+ verification accuracy.
- Deployed as an async FastAPI service with sub-second inference latency, reducing manual processing by 80%.  
**Tech:** Python, FastAPI, YOLOv8, OpenCV, Tesseract, Redis, Git

## Education

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New Horizon Institute Of Technology | THANE, Maharashtra  
Mechatronics Engineering  
GPA: 8.2/10

## Certificates & Awards

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- **Robotics Club Lead & Member** – Led team projects including a **smart navigation system for visually impaired individuals** using sensor fusion and real-time obstacle detection; mentored juniors on embedded systems and robot design.
- **Winner – Local Robotics Competition** – Built a **path-following robot** using IR sensors and PID control, achieving first place among 20+ teams.
- **Team Lead & Runner-Up – ClearRoute Agentic AI Hackathon** – Led a 5-member team to develop a **real-time racing analytics system** with live data processing and AI-powered strategy recommendations, competing against 100+ teams nationwide.

### Certifications

- IBM Machine Learning Professional Certificate (Coursera)
- Applied Machine Learning (University of Michigan)
- Computer Science and Programming Foundations (University of London)