Swayam Prakash Sahoo

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Education

ITER, SOA University	Bachelors in Technology
CSE(AI & ML) GPA: 8.4	2023-27
ODM Public School	Class 12th
PCMC	2023
DAV Public School, Pokhariput	Class 10th
	2021

Skills

Programming Language: Python, Java
Query Language/Database: SQL
Developer Tools: Jupyter Notebook, VS Code, Eclipse IDE
Frameworks and Libraries: TensorFlow, OpenCV, Pandas, Numpy, Matplotlib, scikit-learn, Turtle
Software/Tools: ChatGPT, Microsoft Office, Bandlab, Garageband, Canva, CapCut
Soft Skills: Team Management, Leadership, Communication, Event Designing and Management
Language: English, Hindi, Odia

Projects

TARA (Threat Alert Rescue Assistant) | IoT + AI-based Women Safety System

Jan 2025 – Present
Tech: Arduino Nano, SIM800L, Neo-6M GPS, IR Sensor, Voice Module, Embedded C, Python
• Designed to address the lack of autonomous safety tools for women in constrained, high-stress situations.
• Tasked with developing a discreet, wearable device that could trigger SOS alerts without needing user interaction.
• Engineered a multi-trigger system using IR sensors for motion detection, a voice module for distress words (e.g., "help", "stop"), and manual button presses. Integrated GPS + SIM800L for auto-calling and SMS, along with a loud buzzer to alert nearby people.
• Achieved a compact, ₹1200–₹1500 unit cost suitable for embedding in jewelry. Companion app (in progress) enables alert relay, live audio streaming, and volunteer onboarding. Planned integration of a pulse sensor to detect abnormal heart rates and enable biometric-triggered SOS. Envisions a nationwide safety ecosystem powered by IoT + AI.

TARA-Vision | AI Surveillance for Women Safety

Feb 2025 – Present
Tech: Python, OpenCV, TensorFlow, YOLOv8, ResNet50
• Tackled the need for real-time surveillance to identify distress scenarios in public spaces under the TARA initiative.
• Aimed to develop an intelligent CCTV assistant capable of detecting threats without manual intervention.
• Built an AI-powered system using a custom-trained ResNet50 (99%+ train / 97% test accuracy) and YOLOv8 for live detection of "Lone Woman" and "Surrounded Woman" events. Added OpenCV-based raised-hand SOS detection, supporting user-defined distress gestures.
• Achieved <200ms inference speed for real-time edge deployment. Designed as the "Eye of TARA," enabling seamless integration with the IoT module and app for AI-triggered emergency alerts.

Internship Experience

Native Engineering	Remote
Campus Ambassador	Feb 2025 - Mar 2025

Certifications

- Complete AI, Machine Learning, Data Science Bootcamp - Udemy
- GOLDMAN SACHS Software Engineering Virtual Experience Program - Forage (February 2025)
- DELOITTE AUSTRALIA CyberSecurity Job Simulation - Forage (February 2025)