SOHAM THUMMAR

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SUMMARY

Engineering student with hands-on experience in **AI, Machine Learning, IoT, and Robotics**. Skilled in Python, C/C++, and MicroPython, with experience deploying models on ESP32, ESP32-CAM, and Raspberry Pi. Passionate about building intelligent systems, automation, and real-time edge computing applications.

TECHNICAL SKILLS

Languages: Python, C, C++, MicroPython, php, js
Frameworks & Tools: TensorFlow, Keras, OpenCV, NumPy, Pandas, Matplotlib, Scikit-learn, MySQL, Git, Anaconda, react
Hardware: ESP32, ESP32-CAM, Raspberry Pi
Domains: Machine Learning, IoT, Embedded Systems, Computer Vision, Automation, Edge Computing

PROJECTS

Iris Species Classification (Logistic Regression)

- **Link:** https://github.com/SOHAM-THUMMAR/OCI-ai-foundation
- Built a Logistic Regression model to classify Iris species using petal and sepal features.
- Implemented complete ML workflow: preprocessing, scaling, train–test split, and evaluation.
- Achieved **98% test accuracy** using scikit-learn.
- Created a prediction pipeline for unseen data classification.
- **Tech:** Python, Pandas, NumPy, scikit-learn.

Brain Tumor Detection (CNN, TensorFlow)

- **Link:** https://github.com/SOHAM-THUMMAR/Brain-Tumor-Detection-Model-using-Keras
- Developed a custom CNN model to classify MRI scans as **tumor vs. non-tumor**.
- Applied data augmentation and normalization using ImageDataGenerator.
- Used EarlyStopping and ModelCheckpoint for improved and stable training.
- Achieved **~90% validation accuracy** and saved the best model (bestModel.keras).
- **Tech:** TensorFlow, Keras, NumPy, Matplotlib.

WaitMed — Hospital Finder & Crowd Tracker (Mobile App)

- Link: https://github.com/SOHAM-THUMMAR/wait_med
- Developed a mobile application to help users find nearby hospitals and check real-time crowd levels.
- Integrated openStreetMaps API for location tracking, hospital discovery, and navigation.
- Used Firebase for real-time data storage, updates, and user-submitted crowd information.
- Implemented dynamic hospital listings with live status updates to support faster medical decisions.
- Designed a responsive and user-friendly interface for both Android and iOS platforms.
- **Tech:** Flutter, Dart, Firebase, openStreetMaps API

Void-Music — Full-Stack Music Streaming Web App

- Link: https://github.com/SOHAM-THUMMAR/Void-Music
- Built a full-stack **music streaming web application** enabling users to register, log in, browse songs, and play/manage custom playlists.
- Implemented **user authentication** with secure login and registration flows using PHP and MySQL.
- Developed features to **upload songs**, search music, like/favorite tracks, and manage personal playlists.
- Created an **admin panel** for content approval and platform moderation.
- **Tech:** PHP, MySQL, HTML, CSS, Bootstrap, JavaScript, jQuery

SIH-2024 — Automatic SAR Change Detection (Smart India Hackathon 2024)

- Link: https://github.com/SOHAM-THUMMAR/SIH-2024
- Developed an automated **change detection system** using **Sentinel-1 Synthetic Aperture Radar (SAR)** data on **Google Earth Engine** to analyze surface changes like deforestation, floods, and construction.
- Built an **interactive workflow** allowing users to draw areas of interest (AOI) on a map, export GeoJSON, and trigger end-to-end processing for multi-temporal analysis.
- Automated SAR data extraction and differencing across user-defined time frames, highlighting significant changes with configurable thresholds.
- Integrated Earth Engine JavaScript generation, Drive export tasks, and visualization workflows for seamless satellite data analysis.
- Designed both backend logic (Python) and frontend interactive map components (HTML/JavaScript) for an intuitive user experience.
- **Tech:** Python, Google Earth Engine, Sentinel-1 SAR, HTML, JavaScript

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ACHIEVEMENTS & CERTIFICATIONS

- **NPTEL – The Joy of Computing Using Python**
- **Oracle Cloud Infrastructure (OCI) AI Foundations** – Gained understanding of ML and DL concepts.

EDUCATION

RK University, Rajkot	B.Tech in Computer Engineering	8.39 CGPA	(2023–2027)
Chanakya Science School	HSC	PR:66.27	(2021–2023)
Swaminarayan Gurukul	SSC	PR:87.63	(2018–2020)

REFERENCES

- **Dr.Chetan Patel** associate professor, RK University
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- **Prof.Nikunj Vadher** associate professor, RK University
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