

Isaac Natarajan

AI & ML Developer

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My Portfolio

About Me

AI Software Engineer skilled in developing machine learning models using Python and frameworks like TensorFlow and PyTorch. Experienced in real-time computer vision, data preprocessing, and predictive modeling through internships and projects focused on IoT and smart city applications. Gained practical expertise in anomaly detection, feature extraction, and scalable AI workflows. Certified Ethical Hacker with a strong foundation in cybersecurity and AI-powered threat detection. Motivated to apply AI infrastructure skills in cloud and edge computing environments, delivering innovative and robust solutions.

Professional Experience

Prodigy Infotech | Chennai, India

Machine Learning Intern

January 2024 to February 2024

- Applied convolutional neural networks (CNN) for image classification to detect anomalous patterns, analogous to anomaly detection in IoT and security systems.
- Performed structured data preprocessing and feature extraction to build reliable and scalable AI models.
- Tuned models and optimized workflows to improve predictive accuracy, supporting robust production-ready AI systems..

ExcelR Solutions | Chennai, India

Data Science Intern

July 2023 to October 2023

- Cleaned and normalized large datasets to maintain data integrity for AI-driven analytics and monitoring systems.
- Applied predictive modeling technical approaches that demonstrated the student's capacity for anomaly detection which can assist in detecting unusual behavior of networks or users.
- Optimized workflows, validated results, and applied analytical rigor that can be relevant in vulnerability assessment or response to cyber incidents.

Projects

College Bus Monitoring Using ANPR

- I created a means of detecting bus entry/exit through ANPR cameras, thereby improving campus security.
- Developed number plate recognition in Python, allowing for real-time monitoring of all buses.
- Completed the work by ensuring detection was accurate in a variety of light conditions and occlusions.
- I learned a commercially useful skill set in real-time video processing, automation and security monitoring.

Tool Tech for Visually Impaired Individuals

- Created a wearable device combining camera-based vision and audio feedback to inform direction for navigation.
- Used advanced computer vision algorithms to detect objects, describe the environment and provide audio feedback.
- This project indicates my experience with real-time system design and using sensors to safety concerned build software.

Fake News Detection (Security-Analytical)

- Applied NLP to detect misinformation patterns in online content.
- Wrote Python scripts to process text and prepare appropriate features for encoded patterns of interest.
- This indicates my analytical skills, as well as automation and pattern recognition transferrable to detecting cyber threats.

Certificates

- **Artificial Intelligence- AICTE**
- **Intermediate to Machine Learning - Kaggle**
- **Python for Machine Learning - Great Learning**
- **Oracle Cloud Infrastructure - Oracle**
- **CEH & APT : *Ongoing***

Skills

- **Programming & Frameworks:** Python (expert), C++, TensorFlow, PyTorch (basic), Keras, Scikit-learn, Hugging Face (familiar)
- **AI/ML Tools:** CNNs, computer vision (YOLO), NLP, predictive modeling, anomaly detection
- **Data & Cloud:** Data preprocessing (Pandas, NumPy), Airflow (trained/familiar), Apache Spark (basic), Oracle Cloud Infrastructure
- **Scripting and Languages :** Python, Bash, Powershell, SQL
- **Security :** CEH trained, SIEM analysis, ISO/IEC 27001 (Familiar)
- **Soft skills :** Communication, Adaptability, Problem-Solving

Education

Sathyabama University, Chennai, India

July 2021 - May 2025

B.E. Computer Science with Artificial Intelligence & Machine Learning

Secured CGPA 8.23/10

Additional Information

- Languages - English, Tamil, Malayalam
- Currently residing in Sharjah under parent visa sponsorship.
- Driving license in progress