Isaac Natarajan
AI & ML Developer

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My Portfolio

About Me

I am an AI and Machine Learning Developer with hands-on experience in building and deploying machine learning models using Python and popular frameworks such as TensorFlow and Keras. I have worked on projects involving computer vision, data preprocessing, and predictive analytics. With a focus on continuous learning and practical application, I am passionate about developing AI solutions that solve real-world problems and improve system efficiencies.

Professional Experience

Prodigy Infotech | Chennai, India

Machine Learning Intern   *January 2024 to Febuary 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

- <u>Artificial Intelligence</u>*- AICTE*
- <u>Intermediate to Machine Learning</u> *- Kaggle*
- <u>**Python for Machine Learning**</u> *- Great Learning*
- <u>Oracle Cloud Infrastructure</u> *- 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*