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RAJESH

SOFTWARE ENGINEER, AI/ML

SUMMARY

Dynamic and results-oriented AI/ML Engineer with a proven track record of delivering innovative solutions in computer vision and deep learning. Experienced in developing cutting-edge AI models and pipelines to address complex challenges in various industries. Skilled in leveraging state-of-the-art algorithms and techniques to deliver accurate and efficient results. Strong collaborator with excellent problem-solving abilities and a passion for delivering impactful solutions.

KEY SKILLS

- Python
- Deep Learning
- Computer Vision
- Pytorch
- Tensorflow
- Natural Language Processing (NLP)
- OpenCV
- Linux Shell Scripting
- Flask, Unicorn
- Containers

ADDITIONAL SKILLS

Database

- PostgreSQL
- MYSQL
- Redshift

Analytics and Dashboard

- Apache Superset
- Metabase
- Plotly Dash
- Redash
- Grafana

PROFESSIONAL EXPERIENCE

Software Engineer, AI/ML (June 2018 – Present)
Ahana Systems and Solutions PVT LTD | Bangalore

- Developed AI solution for Indian motorcycle manufacturer to detect fake images, verify vehicle presence at service centers, and prevent misuse of free services.
- Developed tire detection and damage classification solution for leading Indian tire manufacturer, reducing warranty claim processing time and enhancing operational efficiency.
- Developed AI-powered video analytics solution for manufacturing industries in India, improving safety adherence and reducing insurance penalties.
- Implemented online E-KYC solution for automated customer identity verification, leveraging OCR, object detection, and face net library.

PROJECTS

Project1: Fake image detection and vin/reg OCR
Description: One of the Indian multinational motorcycle and scooter manufacturer was needing a mechanism to verify the vehicle's physical presence at the service centre during claiming of vechile free services which provided by manufacturer for new vehicles. People at service center used to create fake job card with different vechile details to avail free services for ineligible vehicles.

- Streamlit

Cloud Services

- AWS (Fundamentals)
- Azure (Fundamentals)

AWARDS/ACHIEVEMENTS

- Star Performer Award (June 2021)
- Start Performer Award (September 2022)

we developed an ai solution which classifies different kind of fake images and also verifies vin (vehicle identification number) and registration plate number by recognizing it from the images uploaded by the user.

Project 2: Video analytics for non-safety detection
Description: We have developed video analytics ai solutions for some of the leading cement and other manufacturing industries in India.

The client was facing challenges in ensuring its employees adhered to safety guidelines, which resulted in insurance penalties and a high number of compensation claims. To address this issue, I have developed an AI/ML solution for video analytics that detects non-safety measures such as the absence of safety helmets, shoes, gloves, fall detection, and no movement of workers, crossing unauthorized areas. Our solution involved the use of advanced AI/ML techniques to analyze video footage from cameras installed in various areas of the organization's facilities

I worked closely with the client to understand their safety requirements and identified the key areas where the solution would be implemented. We created AI/ML to design and developed a solution that detects non-safety measures accurately and in real-time. The solution was tested extensively at the client's facilities.

The impact of the solution was significant to clients - it resulted in a change in behavior and higher adoption of safety standards by workers. As a result, the company ensured reduced penalties from insurance companies and a reduction in compensation to workers due to improved safety

Project 3: Tire Detection and Damage Type Classification Solution
Description: We were approached by one of India's leading tire manufacturers to assist with their warranty claiming process. I have successfully developed a robust tire detection and damage type prediction model pipeline, leveraging state-of-the-art models such as EfficientNet and YOLO-v5. This cutting-edge solution has significantly reduced the time required for warranty claims from weeks to mere minutes.

The initial dataset we worked with presented challenges, including data imbalance across 32 different damage types and the presence of noisy data. However, through meticulous data cleaning and the application of advanced augmentation techniques, we achieved an impressive classification accuracy of approximately 93%.
By implementing our solution, we have revolutionized the warranty claiming process for our client, ensuring faster and more accurate identification of tire damages. This not only streamlines their operations but also improves customer satisfaction by expediting the claim resolution process.

Project 4: Handwritten Text Recognition
Description: handwritten text recognition system in various user filled forms and images, including page detection and word segmentation, using 5cnn and 2 rnn layers with ctc loss function along with word beam search decoder. The project was updated with attention mechanism.

Project 5: Online E-KYC
Description: Online E-KYC is a project which involves computer vision tasks where clients need to automate their online customers identity verification. We helped them to verify Aadhar, pan details and photo, self-recorded verification. We used advanced OCR and object detection algorithms and facenet library. And trained with private Aadhaar and pan card image dataset with complex augmentation techniques

EDUCATION

Bachelor in computer applications
Govt first grade college, Tumkur
June 2017