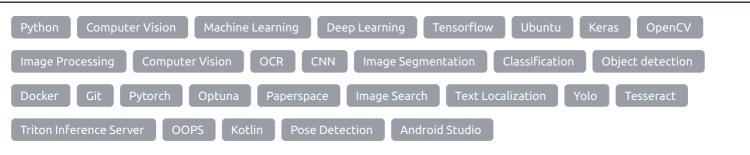# Sachin Rajan
Computer Vision Engineer

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Bangalore, India 📍

linkedin.com/in/insanesac in

github.com/insanesac

Experienced engineer with over 6 years in solving image challenges using image processing, deep learning and computer vision technologies. Skilled in Python, Tensorflow and OpenCV. Seeking to leverage my skills and knowledge to deliver value and insights at scale.

SKILLS

Python · Computer Vision · Machine Learning · Deep Learning · Tensorflow · Ubuntu · Keras · OpenCV

Image Processing · Computer Vision · OCR · CNN · Image Segmentation · Classification · Object detection

Docker · Git · Pytorch · Optuna · Paperspace · Image Search · Text Localization · Yolo · Tesseract

Triton Inference Server · OOPS · Kotlin · Pose Detection · Android Studio

WORK EXPERIENCE

Computer Vision Engineer - Freelance
Areno
11/2023 - Present   *Remote*

Achievements/Tasks
- Developed an adroid App using kotlin for detecting lunges done by a user.
- Integrated Mediapipe Pose Estimation with the android app to count proper lunches with above 95% accuracy.

Computer Vision Engineer
Klevu Oy
03/2021 - 10/2023   *Remote*

Achievements/Tasks
- Developed an Image Search engine that given a query image finds similar images from a set of images.
- Created a colour identification module with 90 per cent accuracy and integrated it with the Image Search engine to improve performance.
- Trained a classifier for identifying objects in the furniture domain with close to 90 per cent accuracy.
- Created endpoints for different image processing as well as deep learning modules using flask.
- Trained EfficientDet-based object detection models in the furniture and fashion domain. Integrated the detection models to improve the search speed of Image Search engine by reducing the search space.
- Used LLMs like Minigpt4, Taskmatrix and others for generating captions for images to enrich search experience.
- Deployed model containers using Triton Inference Server.

WORK EXPERIENCE

Computer Vision Engineer
Camcom
01/2018 - 02/2021   *Bangalore*

Achievements/Tasks

- Developed a model that detects helmets from a video stream with an accuracy of 92% to ensure rider safety.
- Designed an automated quality check of apparel from scratch. Improved the same till an accuracy of 90% was achieved. Deployed the solution in all the warehouses of the e-commerce platform named Myntra.
- Compared various OCR engines performance on reading apparel price tags like tesseract 3, tesseract 3, easyocr, inhouse trained CTPN and inhouse trained CRNN model.
- Experimented with various image preprocessing techniques like alignment correction, image sharpening, binarization etc to improve OCR performance.
- Trained a text localiztion model (EAST) for identifying words on price tags with 95 percent accuracy.
- Identified damages on a vehicle with 90% accuracy for estimating the claim an insurance customer is entitled to.
- Developed a POC for reading registration certificates for all Indian states as part of the damage detection use case.
- Created an Annotation validator tool for various models to save time on data validation.
- Trained a CRNN model (text recognition) for the purpose of recognizing characters in a license plate.

Computer Vision Engineer
Profiledskin
07/2017 - 12/2017   *Ahmedabad*

Achievements/Tasks

- Measured the length of human feet from images, for suggesting footwears of the exact size to users.
- Obtained various measurements of shirts so as to suggest the user a shirt of similar measurements.
- Achieved 90% accuracy in detecting skin pixels from images.

PUBLICATIONS

Conference Paper
Hyperspectral image denoising: A least square approach using wavelet filters
Vishnu S Dev, Sachin Rajan
Sowmya Vishvanathan, Soman Kp
Sep 2017
The need for better denoising techniques has brought about the birth of different image denoising algorithms, each with its own unique characteristics. This paper compares the efficiency of various image denoising techniques like, total variation denoising, Legendre-fenchel transform and wavelet transform denoising with the proposed method of least square denoising using wavelet filters.

Conference Paper
Dependency of Various Color and Intensity Planes on CNN Based Image Classification
Sachin Rajan
Sowmya Vishvanathan, Govind Divu, Soman Kp
Jan 2018
This paper proposes the use of a pre-trained network to classify specific scene categories. The pre-trained network is combined with the simple classifiers namely, random forest and extra tree classifiers to classify scenes along with the effect of different color spaces such as RGB, YCbCr, CIEL*a*b* and HSV on the model performance.

PERSONAL PROJECTS

A Feature Matching Algorithm with low computational complexity for image ortho-mosaicing (06/2016 - 12/2016)
- Feature extraction with SIFT algorithm. Feature matching and stitching of images with common regions or overlaps to obtain a complete single image

EDUCATION

Masters in Remote Sensing
Amrita School of Engineering
08/2015 - 07/2017   *Coimbatore*

Courses

- Image processing, AI, Computer Vision, Hyperspectral imaging, Matlab

CERTIFICATES

Neural Networks and Deep Learning (Coursera)
 (09/2017 - 10/2017)
DeepLearning.AI course on neural networks and deep learning basics.

Mathematics for Machine Learning: Linear Algebra
 (05/2019 - 05/2019)
Course on essential math for machine learning.

The Beginners Guide to Docker (12/2022 - 12/2022)
Course on docker basics

Introduction to Machine Learning in Production
 (12/2022 - 12/2022)
DeepLearning.AI course on mlops basics.

Machine Learning Data Lifecycle in Production
 (12/2022 - 12/2022)
DeepLearning.AI course on best practices in data mangament.

Object-Oriented Python (Coursera) (10/2023 - 10/2023)
Python OOPS course