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Summary

3+ years experience of *Deep Learning R&D* in various domains like manufacturing, robotics, retail etc. Have extensive experience on developing solutions with Computer Vision and Machine Learning.

Education

- 2013–2015 **M. Eng. Information Science**, *Nara Institute of Science and Technology*, Nara, Japan.
- 2009–2013 **B. Tech. Electrical Engineering**, *Indian Institute of Technology*, Jodhpur, India.

Professional Experience

- Jul'19-Curr **Senior Data Scientist**, *Abeja Pvt. Ltd.*, Singapore.
  I am **developing Deep Learning solutions for various industries**.I have developed state-of-the-art models for **Image Classification, Object Detection, Video Classification, Pose Estimation, Face Recognition etc.** Also, I provide strategic advice on effective implementation of deep learning solutions in industrial setting. I am also providing **learning sessions on Data Science and Deep Learning for business members**.
- Aug'16-June'19 **Researcher**, *Abeja Inc.*, Tokyo, Japan.
  Abeja is a B2B *Platform as a Service* company that provides AI solutions across several industries. Researched and Developed **end-to-end pipeline for classification and object detection** using state-of-the-art models.
- Oct'15-May'16 **Robot Navigation Intern**, *Rapyuta Robotics*, Tokyo, Japan.
  Rapyuta Robotics is developing cloud platform for robots such as drones for easier autonomous deployments. I **developed and extended state-of-art algorithms for Cloud based RGBD SLAM**. In a team of 4, conducted weekly live demos for potential clients on aerial vehicle obstacle avoidance.

Technical Skills

- **Programming Languages:** Python(Proficient), C++(Prior Experience), LaTeX
- **Libraries & Tools:** PyTorch(Proficient), Tensorflow(Prior Experience), OpenCV(Proficient), GCP, Docker, ROS, TensorRT, Scikit-Learn, Pandas, Jupyter, Flask, RestAPI etc.

Publications

- 2018 **Practical Computer Vision**, *Book, Packt Publishing*.
  Authored a book on Computer Vision for undergraduate students who would like to start their approach with hands-on on basic algorithms. It consists of chapters ranging from simple image processing to deep learning based object detection and follows OpenCV, Keras and Tensorflow as development environment.

Projects

- **Kaggle: FGVC2020 Plant Pathology Competition**: Competed in Kaggle competition to categorize apple tree diseases from images. Developed solution using state-of-art Image Classification techniques to achieve **top 26%** on private leaderboard. Code available at https://github.com/ResByte/plant-pathology-2020-fgvc7-pytorch
- **Deep Learning for Edge Deployments**: Trained and benchmarked object detection models(SSD, Faster RCNN) with **TF Object Detection API** for surface anomaly detection. Ported it on Jetson TX2 edge device with about **2x run time improvements** using **tensorrt**. Showcased solution demo to various potential clients.
- **Person Detection for Security in Automotive Industry** :Developed deep learning model to detect person and its distance from vehicle in order to raise the alarm in case of close proximity. Model performed **significantly better than the pretrained models**. Deployed model on a proprietary edge device using Nvidia GPU with **2x speed improvements**.
- **Scalable Serverless Prediction API on GCP:** Using Google Cloud Functions, developed REST API deployment for predicting top category from image that can serve for a millions of calls over a month. Code is available at: https://github.com/ResByte/torch-gcp-fn
- **Python Lib : imfeatures** Created minimal python package to extract deep learning features from a wide variety of pretrained models using Pytorch. This can be installed via pip and easily extensible. Code is available at : https://github.com/ResByte/imfeatures

Coursework and Certifications

AI for Medicine (Coursera) | Computer Vision | Artificial Intelligence | Robotics