

SHREEYASH PAWAR

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SUMMARY : Experienced in development and productising applications, made using python and AI libraries on Linux/Embedded Linux/Windows platforms.

EXPERIENCE :

Sravathi.ai, - Data Scientist,

March'20 – Present

- Generative modelling using GAN,VAE's and encoder decoder based models for novel drug discovery for corona virus. The drugs were experimentally validated. The contribution resulted in 2 patents filing.
- Multiple chemical property prediction using various modelling techniques, from ML to deep learning based (graph representation) techniques.
- Drug-Drug side effect predictions as link prediction task using heterogenous knowledge graphs.
- Trained model for Tabular data extraction from patent pdf's, using mmdetection framework.
- Configured AI training server with ubuntu-server edition, configured the GitLab enterprise sever and workflow.

Société Générale, - Software developer,

July'19 – March'20

- Exposure to professional development environment that follow SCRUM methodology, and AGILE driven development.
- Reduced kit development time up to 20% by building automation tool in Python.

IoT.IOT.in , -Intern,

June'18 – June'19

- Lead a team of 15 people to develop real time scalable face recognition system that can run on constrained ARM devices.
- Successfully piloted "[AI Face registration](#)" at "Women in DS, conference'19", a Stanford initiative, at Pune.
- Achieved record FPS on Arm v7 architecture using model optimisation techniques and scrutinized the effect of various tuning parameters on a standard dense neural network
- Implemented "[AI-Ganpati](#)" application for seamless "Ganpati Darshan". With Face, Audio recognition for every devotee to disperse sweet.
- Learned Embedded Linux and implemented ubuntu root file system for Hikey-970 SBC.

SKILLS :

- Proficient: Python, TensorFlow, OpenCV, scikit-learn, Keras, Git, Pytorch, Pandas.
- Used: Embedded Linux, Bash scripting, Docker

PROJECTS :

[SenseCart- a cashierless shopping cart](#)—

- A smart shopping cart with auto-checkout. Deployed on Raspberry-pi 4.
- Modelled as one-shot classification problem, creating positive, negative pairs of data from manually curated dataset of 10 classes, to feed to Siamese network.
- Trained Siamese network with BCE loss and L1 distance, using MobileNetv2 as base feature extractor.
- Achieved accuracy of 0.82. Quantized weights to FP-16 post training, pruned weights, fused layers.
- Utilised: OpenCV, Keras, TFlite

[Real time object separation using robotic arm](#)—

- Built a real time computer vision application for Hikey-970 SBC for robotic arm application. Custom trained and curated 2000+ images of 4 soap brands, with hyperparameter tuning, to get model with mAP of 93.81 % on our test dataset.
- The base architecture used was "MobilenetV2", with SSD framework for object localization.
- Custom operating system base, is configured with required dependencies for our target architecture `aarch64` on single board computer, our contributions are merged upstream with mainline OS which will be made open source.
- The trained model served using lightweight OpenCV DNN module for faster inference.
- The application gave industry leading performance of 160ms per frame or 6fps on complete utilisation of 8 core ARM Cortex-A73 and A53, adequate for real time operation.
- Utilised: *Application side:* Tensorflow-v1.9,Tensorboard,OpenCV-3.8, labellmg ;
System side: Custom Arm-v8 embedded Linux OS, Pyserial-3.4, Robotic arm.

[Isolated word recognition for home automation](#)—

- Developed a speaker dependant word recognition program and deployed upon Raspberry pi, that detected syllables "ON","OFF" from external mic.
- Trained KNN classifier on extracted MFCC coefficients of training set having 50 sets of "ON", "OFF" .wav files.
- Utilised: Python, Scikit-learn, pyaudio, librosa library, raspbian programming.

EDUCATION :

College Of Engineering, Pune(COEP) ,

2015-2019, BTech- Electronics & Telecommunication,

- Electrical subsystem and Innovation head of SAE collegiate club "Team Velociracers" that designs and builds hybrid electric vehicles. Eventual National Championship winner at "SAENIS Efficycle 2017."
- Pitched own start-up in warehouse automation at Siemens-BHAU entrepreneurship program to Industry panellists. Selected for full incubation at "BHAU" incubator.