# Somasundaram S

## Datascientist

**Email** : Somasundaram1702@gmail.com

**Phone** : +91-8380097650

**Address** : Pune, Maharastra

Data scientist with more than 7 years of experience in working with Artificial Intelligence and Digital Image Processing. Skilled in optimization and porting various AI models on to edge devices. Passionate to solve challenging problems in the computer vision domain.

## Skills

- Python
- Computer vision
- Image processing
- Artificial intelligence
- C++
- Object detection
- Segmentation
- Machine learning
- Pytorch
- Numpy

## Work history

**03/2020 - Present**    *eInfochips ( An Arrow Company )*

**Snapdragon**
- An Android application was developed to recognize face on Snapdragon 845 board (smart phone platform).
- AI models were optimized using Snapdragon Neural Processing Engine (SNPE) and ported on to GPU and DSP.
- Extreme value machine, an open set classification algorithm was decoded and developed using Java.

**Nvidia**
- A face recognition model developed and deployed on the Nvidia Jetson Xavier AGX board.
- The model can identify unknown and known faces with an average accuracy of 96% with well-known datasets like LFW and VGGFace2.
- The model is optimized using the TensorRT module, improving the  inference speed 10-15 times.

**08/2014 – 03/2020**    *Sandvik Asia Pvt. Ltd., Pune*

**Patent : EP18173333.8 (Under review in EPO)**
- An inspection system for inspecting the internal surface of tubes was designed and developed.
- A light and efficient Convolutional Neural Network model was designed & trained to automatically identify and classify 5 different types of defects using bounding boxes.
- The CNN algorithm can identify defects of size ranging from 100 micron to a few millimeters.
- The algorithm was optimized to run on an edge device with at least 15 fps, making the inspection system work real time.

# Other Projects

03/2020-06/2020        *Shoe recommendation system*

- Siamese network was used to train shoe's front and side views similar to training faces.
- Triplet loss function was utilized for training the VGG16 & VGG19 model
- Top 3 accuracy of 85% and Top 5 accuracy of 93% was achieved

04/2021-06/2021        *Automatic Recency test result identification*

- Recency test uses a strip to identify if a patient has HIV positive or negative
- Lines that appear after test are identified using image processing techniques
- The developed algorithm is able to predict 3 situations, HIV +ve, recent +ve & -ve with 99 % accuracy

# Education

07/2011 – 08/2014     *Master of science*     *CGPA : 8.8*

*Indian Institute of technology, Madras*

06/2007 – 04/2011     *Bachelor of Engineering*     *CGPA : 9.01*

*Sri Ramakrishna Engineering College, Coimbatore*