

# SOUMYAJIT ROUT

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## EDUCATION

**Veer Surendra Sai University of Technology**  
B.TECH IN COMPUTER SCIENCE AND ENGINEERING

Burla, Odisha, India 768018  
2017-2021

## EXPERIENCE

### ML & AI Intern

Digital Tesseract

Chennai, India  
APR 2020 - JUN 2020

- Build a Data explorer app using Streamlit for some standard Machine Learning datasets.
- Written and published articles on various Machine learning concepts.

### NLP Intern

KM UnoTag Pvt Ltd

Bangalore, India  
JUL 2019 - NOV 2019

- Designed a chatbot using Dialogflow to fetch text/images from the user and process it using a Flask backend.
- Worked on a credit system that gives users credits upon scanning a QR code on company's products and sending it to the chatbot.

### HPC and DL Intern

Center for Development of Advanced Computing (C-DAC)

Pune University Rd, Pune, India  
DEC 2018 - JAN 2019

- Training internship on High Performance Computing, Linux, Machine Learning and Deep Learning.
- Solved various computation heavy problems using parallel computing models i.e OpenMP, MPI and CUDA.

## PERSONAL PROJECTS

### Face Image Reconstruction using SFSNET and GANs

- Implemented a research paper on SFSNET for Image reconstruction in Tensorflow framework.
- Modified the model's architecture by using SFSNET as the Generator in a GAN model.
- Created custom layers, loss function and model training function.

### Poem Generator

- Preprocessed a text corpus of poems containing punctuation, numbers and various symbols.
- Built and trained a RNN model using Tensorflow for word level sentence generation and achieved 98% accuracy.
- Deployed the model as a web app using Flask and designed it using HTML and CSS.
- Hosted the web app on Heroku.

### Object Detection and Counting of Objects

- Using images of delivery boxes, annotated with labelimg software, trained a custom object detector model with YOLO in Tensorflow.
- Captured a video with OpenCV and detected the objects in a video and displayed the total number of packages in the frame, which helps in monitoring the average amount of packages passing through the footage.

### Emotion Recognition using OpenCV and CNN

- Trained a Convolutional Neural Network model using FER-2013 dataset to classify facial expressions.
- Using Haar Cascade in OpenCV detected faces from image/video input and used them to feed the CNN model for classification.

## TECHNICAL SKILLS

- **Languages & Technologies:** Python, C/C++, JavaScript, Dart, SQL, HTML, CSS
- **Libraries & Frameworks:** Tensorflow, OpenCV, nltk, Pandas, Streamlit, Flask, Django, BeautifulSoup, Flutter
- **Softwares:** Git, Github, DialogFlow, Jupyter, Spyder, Andriod Studio
- **Machine Learning:** Neural Networks, CNNs, RNNs, GANs, Reinforcement Learning