

# Ishwar Sawale

DATA SCIENTIST · MACHINE LEARNING RESEARCHER

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## Summary

I have 2.8+ years experience in Data Science. Currently, I am working with Mindstix Software Labs as Data Scientist & Computer Vision Researcher. At Mindstix I am working on Recommendation, ChatBot & Computer Vision Systems. Prior to Mindstix, I was working with Coriolis Technologies Pvt Ltd for 2 years as Machine Learning Engineer.

## Education

### Diploma in Big Data Analytics

CDAC-ACTS PUNE

- Achived grade A with 70.00%

Pune, India

Aug 2015 - Feb. 2016

### BE in Electronics & Telecommunication

UNIVERSITY OF PUNE

- Achived Distinction with 69.33%

Pune, India

Aug. 2011 - May. 2014

### Diploma in Electronics & Communication

MSBTE, MUMBAI

- Achived Distinction with 85.38%

Mumbai, India

May. 2008 - Aug. 2011

## Work Experience & Responsibility

### Mindstix Software Labs

DATA SCIENTIST

- Recommendation Systems for Retail Business
- ChatBot Framework
- Face Recognition Systems
- Algorithm Design
- Computer Vision Systems

Pune, India

Feb. 2018 - PRESENT

### Coriolis Technologies Pvt Ltd

MEMBER OF TECHNICAL STAFF

- Developer & Scrum Master for Cloud Team
- Rails Backend Development for Orchestration tool
- Development of Ansible, Chef and Puppet configuration managers
- License Plate Recognition, Face Recognition

Pune, India

Mar. 2016 - Feb. 2018

## Skills & Courses

**Tools** Git, LaTeX

**Stacks** MongoDB, MySQL, Neo4J

**Languages** C, Python, Java, Go, R

**Frameworks** Ruby On Rails

**Web Technologies** HTML

**Machine Learning** Tensorflow, Keras, Pytorch, OpenAI

### Courses

- Structuring Machine Learning Projects by deeplearning.ai on Coursera
- Neural Networks and Deep Learning by deeplearning.ai on Coursera
- Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization by deeplearning.ai on Coursera
- Recommender Systems: Evaluation and Metrics on Coursera
- Nearest Neighbor Collaborative Filtering on Coursera
- Matrix Factorization and Advanced Techniques on Coursera
- Introduction to Recommender Systems: Non-Personalized and Content-Based on Coursera
- Fundamentals of Digital Image and Video Processing by Northwestern University on Coursera
- Mathematics for Machine Learning: PCA by Imperial College London on Coursera
- Mathematics for Machine Learning: Multivariate Calculus by Imperial College London on Coursera
- Mathematics for Machine Learning: Linear Algebra by Imperial College London on Coursera
- Mathematics for Machine Learning, a 3-course specialization by Imperial College London on Coursera
- How Google does Machine Learning by Google Cloud on Coursera

## Machine Learning Section

### Product Learning ChatBot

Mindstix Software Labs Project

TENSORFLOW, DEEP LEARNING, PYTHON

Current Project

- This bot helps user to learn about certain products
- User can ask questions specific product & based on user's query intent, entity are predicted.
- answer is fetched in real-time from database

### Facial Key Point Detection

Open Source Contribution

TENSORFLOW, KERAS, PYTHON

- Facial Key point detection model trianed on Kaggle Dataset.
- Trained Various models Using Keras & Tensorflow, with multiple optimizers.

### Chatbot Framework

Mindstix Software Labs Project

NLP, LSTM, RASA, PYTHON, FLASK

- This is Deep Learning based Chatbot used by customer in production
- End to End integration of bot with with REST API's

### Neural Style Transfer App

Open Source Contribution

CNN, PYTHON, KIVY

- This app is a TensorFlow implementation of the paper A Neural Algorithm of Artistic Style by Leon A. Gatys, Alexander S. Ecker, and Matthias Bethge.
- The paper presents an algorithm for combining the content of one image with the style of another image using convolutional neural network.

### Prodcutivity ChatBot

Open Source Contribution

NLU, FLASK, SLACK

- Track How much time spend on which task, based on given input this bot extracts intent & slots using NLU
- Once itent & entity predicted, then detected task is added into DB

### User-User Collaborative Filtering

Mindstix Software Labs Project

NEO4J, PYTHON

- Personalized recommender algorithm which learn from past agreements to predict future agreements
- It uses the concept of similarity in order to identify users
- Instead of traditional approach of matrix factorization, Graph database is used

TENSORFLOW, PYTHON

- Singular Value Decomposition (SVD) is used to estimate the size of the basket that we want to predict
- In the second step, we will predict n products which we believe that user will buy in his next order
- TensorFlow based implementation of SVD

**Face Recognition System**[Mindstix Software Labs Project](#)

FACENET, DLIB, SVM, KNN, PYTHON

- From Facenet and Dlib face embedding extracted
- Based on obtained embedding three different classification models are trained
- To tackle unknown person problem and increase accuracy, these three models stacked together

**Face Recognition Library**[Open Source Contribution](#)

FACENET, PYTHON

- Face Recognition working with one API call
- Based on Facenet, available as pip package

**License Plate Recognition System**[Coriolis Tech Project](#)

OPENCV, DEEP LEARNING, PYTHON

- This project was used to auto-detect License Plate in car and fetch license number
- I have used OpenAlpr library along with handcrafting features for License Plate detection
- Custom OCR was trained and used to predict each individual number from license plate

**Real Time Face Recognition**[Open Source Contribution](#)

PYTHON, TENSORFLOW, FACENET, KERAS

- This project was to detect and recognise faces in real time(in video)
- Apart from Traditional methods of face recognition, I have used embedding of two faces as measure to differentiate them
- Pretrained model from Facenet is retrained for my dataset
- I have taken video frame at x milliseconds
- After that, created embedding and compared with model for each frame

**Festival Recognition App**[Open Source Contribution](#)

JAVA, TENSORFLOW, ANDROID

- This is an android app, which detects type of Indian Festival after taking image from Camera or gallery
- For this app I have collected thousands of images for Holi, Diwali, Eid, Birthday, Marriage
- Then I used Inception V4 model from ImageNet and retrained it on above dataset
- This retrained model is optimised for Android by rounding graph and making it compatible for android platform

**Hand written digits classification**[Open Source Contribution](#)

JAVA, TENSORFLOW, ANDROID, KERAS

- This is an android app, which detects number drawn by user between 0 to 9
- I have used MNIST dataset for training two different model with Tensorflow and Keras
- User can draw any digit and prediction from two models are given

**Cancer Survival Prediction**[CDAC Project](#)

R

- This was group project. My role was to develop & predict model for survival of patients
- Dataset was obtained from seer.cancer.org and it has various cancer types with patients data
- Hypothesis was if cancer is detected in early stage and at early age then chances of patients survival are more

## Core Development Section

**True Skin Tone Color Detection**[Mindstix Software Labs Project](#)

PYTHON, OPENCV, IMAGE PROCESSING

*Current Project*

- Algorithm development to get true skin color from image, independent illumination conditions
- Color difference delta E between photospectrometer and developed algorithm is < 2.38

**Data Migration Scripts**[Mindstix Software Labs Project](#)

PYTHON, LDAP, ORACLE DB

- Data Migration From Oracle DB to LDAP using Python

**Orchestration Chef, Puppet, Ansible**[Coriolis Tech Project](#)

RAILS, MONGO, CHEF, PUPPET, ANSIBLE, REST API

- I was working as Team Lead and Lead Developer for this project
- Use case is - client have certain products that need to be managed using configuration manager
- Using either Chef, Puppet or Ansible, we can perform job like install agent, register agent, upgrade agent etc

**Soap client in C**[Coriolis Tech Project](#)

C, SOAP

- I maintained & added new features

**REST API client in GO Lang**[Coriolis Tech Project](#)

GO, REST CLIENT

- I developed this app, which is replacement of curl

**Automate Instance Creation AWS**[Coriolis Tech Project](#)

BASH, AWS CLI, AWS

- Tool for migration of VMware vSphere OVA to AWS AMI

**Rails Backend Development**[Coriolis Tech Project](#)

RUBY, RAILS, MONGO, REST API

- It was dating app, just like tinder
- REST API implementation for various feature request

**Android Apps in Kotlin**[Open Source Contribution](#)

KOTLIN, ANDROID

- Android Apps using Kotlin language