

# Ishwar Sawale

DATA SCIENTIST · MACHINE LEARNING RESEARCHER

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## Summary

I have 3+ 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.

I also have completed 115+ courses related to Machine Learning, AI from Udemy, Coursera, Datacamp, & Linkdin Learning.

## Education

### Diploma in Big Data Analytics

CDAC-ACTS PUNE

- Achived grade A with 70.00%

Pune, India

Aug 2015 - Feb. 2016

### BE E & TC

UNIVERSITY OF PUNE

- Achived Distinction with 69.33%

Pune, India

Aug. 2011 - May. 2014

### Diploma in E & C

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

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

### Coursera

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

### Datacamp

- Machine Learning with Python Track
- Data Scientist with Python Track
- Data Manipulation with Python Track
- Data Analyst with Python Track
- Importing & Cleaning Data with Python Track
- Data Scientist with R Track
- Data Analyst with R Track
- Importing & Cleaning Data with R Track
- Machine Learning with R Track

## Projects

### Color Constancy Algorithm

Mindstix Software Labs Project

PYTHON, OPENCV, DLIB, CNN

Aug 2018 - Current Project

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

### Product Learning ChatBot

Mindstix Software Labs Project

TENSORFLOW, DEEP LEARNING, PYTHON

June 2018 - Dec 2018

- A user can ask questions specific product & based on user's query intents, entities are predicted
- Based on intents real-time data about the product is fetched from the database

### DevOps Chatbot

Mindstix Software Labs Project

NLP, LSTM, RASA, PYTHON, FLASK

Feb 2018 - Aug 2018

- This chatbot helps the user to create a deployment pipeline
- Based on user inputs build can be pushed on a certain environment, get status of build etc

## User-User Collaborative Filtering

[Mindstix Software Labs Project](#)

NEO4J, PYTHON

Feb 2018 - May 2018

- 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

## User-Item Content Based Filtering

[Mindstix Software Labs Project](#)

TENSORFLOW, PYTHON

Feb 2018 - May 2018

- 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

Feb 2018 - April 2018

- 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

## License Plate Recognition System

[Coriolis Tech Project](#)

OPENCV, DEEP LEARNING, PYTHON

March 2016 - Feb 2017

- 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

## Orchestration Chef, Puppet, Ansible

[Coriolis Tech Project](#)

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

Sept 2016 - Feb 2018

- 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

## Open Source Projects

### Facial Key Point Detection

[Open Source Contribution](#)

TENSORFLOW, KERAS, PYTHON

Sept 2018

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

### Neural Style Transfer App

[Open Source Contribution](#)

CNN, PYTHON, KIVY

July 2018

- 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.

## Productivity ChatBot

[Open Source Contribution](#)

NLU, FLASK, SLACK

June 2018

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

## Face Recognition Library

[Open Source Contribution](#)

FACENET, PYTHON

Mar 2018

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

## Real Time Face Recognition

[Open Source Contribution](#)

PYTHON, TENSORFLOW, FACENET, KERAS

Sept 2017

- 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

Aug 2017

- 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

July 2017

- 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