Garima Mahato
Software Engineer,
Samsung Electro-mechanics Software India Private Limited

Phone : +91 – 9663583281
Email : m.garima7@gmail.com

Passionate about Data Science and Machine Learning. Self-driven and motivated individual who is adept at understanding technical papers and implementing them. I like taking up challenges and persevere to give excellent results. I would like to work in a competent, challenging and responsible environment where I can enhance my knowledge and also extend my expertise.

Education

2012-16	BIT Sindri, Dhanbad Bachelor of Technology, Information Technology	(CGPA)8.42/10
2012	12th (Indian School Certificate Examination) Council for Indian School of Certificate Examination	90.5%
2010	10th (Indian Council for Secondary Examination) Council for Indian School of Certificate Examination	89.57%

Experience

Dec'19 – Present

Samsung Electro-mechanics Software India Private Limited

- Role: Software Engineer
- Developed end-to-end solutions in Python using Machine Learning, Deep Learning, Computer Vision and Image Processing, Natural Language Processing concepts

Dec'16 – Dec'19

TATA Consultancy Services

- Role: Systems Engineer
- Developed end-to-end solutions in Python using Machine Learning, Deep Learning, Computer Vision and Image Processing, Natural Language Processing concepts
- Developed Web Application using ASP.Net, AngularJS, SharePoint 2013
- Working experience in Agile/Scrum development environment with frequently changing requirements.
- Delivered projects with 100% customer satisfaction

Workshops & Trainings

June 2020	Completed **Extensive Vision AI 4 Program for 2020(Phase 1)**
Nov 2019	Completed online training on "**Machine Learning by Stanford University**" on Coursera
April 2019	Completed online training on "**Deep Learning A-Z**"
	Completed online training on "**NLP: Natural Language Processing**"
Nov - Dec'15	Successfully underwent online training on **Image Processing-SimpleCV** conducted by Internshala with **90%** score
Aug'14 - Feb'15	Successfully underwent online training in **Python** conducted by Internshala with **100%** score
	Successfully underwent online training in **Web Development(HTML, CSS, PHP, MySQL)** conducted by Internshala with **90%** score
	Successfully underwent online training in **Core Java** conducted by Internshala with **90%** score
Jun-Jul'14	Underwent IBM Career Education program on J2EEwhere I learnt J2EE,JS,DB2,SDLC using various IBM software like Rose 2000,Websphere and developed a project on Online National Polling System.

Projects

May 2020 – June 2020

Image Segmentation

- Created and trained a custom segmentation model for custom dataset with 99% accuracy in tensorflow 2.

Custom dataset for depth and mask

- It consist of: Background image - 100 images of 160x160x3 dimension, foreground with background - 400000 images of 160x160x3 dimension, ground-truth mask - 400000 images of 160x160x1 dimension, ground-truth depth - 400000 images of 160x160x1 dimension
- Link to work: DepthMaskDataset

Mask Depth Generator

- It takes an image and its background as input to generate depth and mask for the image.
- Link to work: MaskDepthGenerator

Feb 2020 – April 2020

Data Preparation tool

- A data preparation tool for Machine Learning and Deep Learning tasks to automate data preprocessing processes and generate standard datasets.
- Role: Backend developer to develop core functionalities of data preprocessing.

Jan 2019 – June 2019

Machine Learning Platform for Data Scientists

- Developed a multi-purpose machine learning platform for data scientists to perform data analysis, model training and model serving from various kinds of consented data coming from another platform so that the developed models can be used by other applications.
- Used Kafka with spark streaming for moving consented data from Data Platform to Machine Learning Platform. Azure Databricks along with MongoDB was used for data analysis, model creation and model serving.

Predicting Ablation Procedure details from data

- Implemented an ML based model to predict ablation requirements of cancer patient and volume that needs to be ablated. The model takes patient details as input and predicts number of probes, power and time for the predicted probes. “MultiOutputClassifier” was used to predict the number of probes and “Regression” was used to predict power and time for those probes with 88 % accuracy. Another model was used to predict the volume of the ablation region.
- Created a python module to read the RTSTRUCT file and generate a 3D view of the lesion volume using Plotly along with its calculated volume in cubic millimetre.
- Created a flask API to serve the created model for consumption by web app.
- A web application was created in ReactJS to provide an interface for taking inputs and generating results using the API.
- Used Image Processing techniques for visualising RTSTRUCT files, and Machine Learning techniques to create and train models.
- Used the above Machine Learning Platform for data analysis, model creation and model serving.
- Language – Python, Libraries – Scikit-learn, Plotly

Mar-April 2019

Chatbot on Bambi Dataset

- This chatbot uses End-to-end memory network to answer question on Bambi dataset with a training accuracy of 90.22%. The network was created concatenating a series of embedding layers and dropout and passing it to an LSTM. This model is based on the reference paper: End-to-end memory networks
- Used Natural Language Processing(NLP) techniques for input analysis and dataset formation, and Deep Learning to create and train models
- Language – Python, Libraries - Keras
- Reference of work: ChatbBot on Bambi Dataset

Feb-Mar 2018

Recommending Projects to Users of site and users to project team

- Implemented a recommendation model using **LightFM** for a website where project teams posted projects for recruiting potential teammates and users could join any project based on

their choice. Each user had a set of skills and each project had a desired set of skills. Using both this information along with other details, this hybrid recommendation model recommends new projects to users and new teammates to projects.

Jun-Jul 2018

Generating Indian Faces with Deconvolutional Network

- Created an **Indian Face Database** consisting of images of 28 Indians in different poses and lighting from scratch.
- Trained a "Deconvolution Neural Network" using this dataset consisting of individual's identity, view, and transformation parameters as input and the image as output with the results that the network learns to generate 2D projections from high-level description of 3D models, learns about face structure and about 3D space concepts. This gained knowledge is then used by the model to infer remaining viewpoints of the same face and also to interpolate between different faces.
- Used Image Processing and Computer Vision techniques for dataset formation, and Deep Learning to create and train models
- Language – Python, Libraries - Keras
- Reference paper: Learning to generate chairs, tables and cars with convolutional networks
- Reference of work: Generating Indian Faces

Sep - Oct 2018

Movie Recommender System

- Used Restricted Boltzmann Machine to recommend movies based on user preference for 1 million movie review data with a test loss of 22.9%. The RBM model was created from scratch in Pytorch.
- Also implemented it using Auto Encoders.
- Language – Python, Libraries - Pytorch
- Reference of work: Movie Recommender System

Sentiment Prediction System

- Used Recurrent Neural Network(LSTM) to predict sentiment of movie review with the training accuracy of 87.39%
- IMDB movie database was used to train the model
- Language – Python, Libraries - Keras
- Reference of work: Sentiment Prediction System

Technical Skills

Languages	*Proficient in*: Python, JAVA	
Web	*Proficient in*: HTML, CSS, JavaScript, AngularJS	*Beginner in*: ReactJS
Database	*Proficient in*: SQL	*Beginner in*: MongoDB
Frameworks	*Proficient in*: Flask, AngularJS, Keras, Scikit-Learn, Numpy, Pandas,Pytorch,Tensorflow 2	

Achievements

2019	Awarded "Certificate of Appreciation" for outstanding contribution towards Technical Excellence
2017	Awarded "ILP Kudos" for outstanding performance during training
2013	Awarded "North America Alumni Association Scholarship" award for being the 2nd branch topper in Information Technology
2010-2012	Received "Timken India Limited Scholarship 2012" for excellent performance in XII Received cash award in Essay Competition conducted by "Department Of Atomic Energy, Atomic Minerals Directorate For Exploration And Research, Eastern Region" Ranked among top 50 students in International Olympiad Of Science at State Level

LinkedIn, GitHub, Portfolio