

AMIT KUMAR

Machine Learning & Business Intelligence | Big Data |
NLP (Natural Language Processing) Solutions

Location Preference: Bengaluru

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Key Skills

Python

Machine Learning

Tensorflow

Natural Language Processing (NLP)

Deep Learning

SQL

OOPS

Data Structures / Data Pipeline

Flask REST API

Scikit-Learn

Algorithms

Linux

Agile

Pandas

Soft Skills



Communicator



Thinker



Collaborator



Innovator



Intuitive

Education

- B.E. in Computer Engineering from Netaji Subhas Institute of Technology, Delhi in 2014



Profile Summary

- Enterprising professional with 5 years of total experience and 3.5 years of experience in building Machine Learning and NLP solutions
- Presently associated with Wissen Technology, Bengaluru as Senior Software Engineer
- Ranked 5th in Microsoft AI Challenge India 2018
- Cofounded a startup, Marax AI
- Extensive project management experience, team building, leadership, proficient in gathering requirements, developing and implementing solutions
- Spearheaded the Intelligent Search project on more than 40000 market research reports for a client in finance domain to help analysts become more productive
- Exposure to Data Warehouse Development Lifecycle and ETL
- Experienced in building data pipelines, distributed data processing and performance optimization



Career Timeline

hCentive Inc., Noida
as Associate Software Engineer

Wissen Technology,
Bengaluru as Senior
Software Engineer

Jul'14 – Oct'15

Feb'16 – Jun'17

Since Aug'17

Marax AI, Bengaluru as Cofounder &
Machine Learning Engineer



Certifications

- STAT110x - Introduction to Probability - edX
- CS224n - Natural Language Processing using Deep Learning
- Applied Machine Learning by University of Michigan, Coursera
- Descriptive Statistics, Udacity
- Deep Learning Nanodegree, Udacity
- ACM ICPC Amritapuri Onsite Regional - Certification of Achievement - 2012
- CS231n: Convolutional Neural Networks for Visual Recognition



Work Experience

Since Aug'17 with Wissen Technology, Bengaluru as Senior Software Engineer

Project: Intelligent Search **Client:** Morgan Stanley

- Worked on intelligent search project. The task is to retrieve the top paragraphs which contains the answer for a given user query from a large corpus of research documents
- Built HTML Parser, Triples Extraction using dependency parsing, NER, Ungrammatical Parsing of queries, training Word Vectors, TF-IDF
- Distributed data processing using multiprocessing. Built Data Pipeline to automate the processing and load in the Elasticsearch database
- Added caching mechanism to decrease request time
- Productionized the system on two different datasets - research reports and wiki information

Project: Natural language queries to SQL queries

- Currently working on in-house project of converting natural language queries to SQL queries
- Using context free grammar to convert a SQL query into series of actions and using encoder-decoder based
- neural network architecture to predict the actions from the natural language
- Implemented a paper publish by Microsoft Research

Feb'16 – Jun'17 with Marax AI, Bengaluru as Cofounder and Machine Learning Engineer

Project: Churn Prediction

- Worked for a carpooling client to forecast churn among users. Different models were built for passenger and car owners using Logistic Regression, Random Forest
- Performed feature engineering to get features like frequency of rides, distance between source and destination location, users availability within a particular range around source and destination, etc.
- Helped clients in understanding and retaining the users by understanding the core problems

Project: Best Match

- Worked on best match system for car owners and riders using similar features mentioned above
- Build Flask API for clients to have access to the system. Helped users in getting better matches
- Presented demo to different investors and clients. Created first version of our website and hosted on AWS



Previous Experience

Jul'14 – Oct'15 with hCentive Inc, Noida as Associate Software Engineer

Project - MA-HIX

- Modified the whole application to 508 compliant to target the blind users following the Web standard guidelines
- Worked on back-office project to handle the user issues. Worked on JavaScript, JSPs, Java, Unit tests



Major Projects

Title: Paragraph Ranking

Period: Dec'18 – Jan'19

Description: Took part in Microsoft AI Challenge 2018 where the task was to rank the 10 candidate paragraphs based on a given query. For each query there was one paragraph which had the correct answer. Performed basic sentence parsing and cleaning, used BM25 initially getting MRR score 0.44. Later tried with different neural net architectures using CNN, RNN, Attention based models. Finally used ensemble of Google BERT model getting MRR score of 0.7079 which was ranked 5th in Phase-1

Title: Abnormalities in CT Scan

Duration: One Month

Description: Worked on a small image segmentation project where task was to generate an image highlighting the abnormality location. Used image augmentation to generate more scenarios followed by U-Net architecture which was based on encoder-decoder mechanism, Achieved loss 0.2483 while dice loss was 0.0616 with val_loss 1.4323 and val_dice_loss 0.3556. There was over-fitting because of less data and complex architecture

Title: Sentiment Analysis

Period: Nov'15 – Dec'15

Description: Classified product reviews using Machine Learning. The data was collected from amazon site using a crawler. The ratings were used to label each review making it a multi-class classification problem. The model was trained using different techniques including Neural Networks, Naive Bayes Classifier, and Logistic Regression achieving accuracy ~ 80% using Python & Theano



Personal Details

Date of Birth: 4th March, 1992

Languages Known: English & Hindi

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