Reshma Shaji

Pre Doctoral Researcher

Work Experience

AI/ NLP/ Pattern Recognition Mentor

IEEE YP Mentor4you

JULY 2021 - PRESENT

Guiding students in the field of AI, NLP, and Pattern Recognition. Clear their doubts on these topics and help them complete a project and publish the results as a research paper.

Artificial Intelligence and Machine Learning Intern

IIT Kanpur

MAY 2020 - JUNE 2020

Performed extraction of useful insights from large structured and unstructured data sets. Evaluated and analyzed existing and new data sets to generate quantitative fundamental insights and model relevant metrics. Applied statistical analysis, deep learning, and machine learning techniques to large data sets for data mining, feature engineering, bias correction, and prediction.

Research

Exploratory Data Analysis on Reddit data: A comparison of features and models for classification of flairs.

Currently under review at IEEE SMAP 2021

Korean to English Machine translation using a sub character level approach

Ongoing Research

Study of Text to Video Synthesis Methods

Ongoing Research

Education

Bachelor of Technology

APJ Abdul Kalam Technological University

2017 - 2021

Major: Electronics and Communications Engineering

Relevant Coursework: Calculus, Differential Equations, Linear Algebra and Complex Analysis, Probability, Random Processes and Numerical Methods, Signals and Systems, Digital Signal

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Industrial Skills

Artificial Intelligence
Machine Learning
Natural Language Processing
Computer Vision
Data Science
Web Scraping
Text Mining
Data Analysis
Data Visualization
Backend development
Git Version Control

Programming Languages

Python
C++
GNU Octave
HTML
CSS
SQL

Tools and Frameworks

Tensorflow
Keras
NLTK
Gensim
Spacy
OpenCV
Scikit Learn
Matplotlib
Seaborn
Numpy
Flask
Django
IBM Cloud

Processing, Digital Image Processing, Object Oriented Programming, Information Theory and Coding, Speech and Audio Signal processing, Operations Research

Certifications

IBM AI Engineering Professional Certificate

2019 - 2020

Implemented ML algorithms including Classification, Regression, Clustering, and Dimensionality Reduction using scipy & scikit learn. Performed ML on Big Data and deployed ML Algorithms and Pipelines on Apache Spark. Demonstrated understanding of Deep Learning models such as autoencoders, restricted Boltzmann machines, convolutional networks, recursive neural networks, and recurrent networks. Built deep learning models and neural networks using Keras and Tensorflow libraries. Demonstrated ability to present and communicate outcomes of deep learning projects.

Probabilistic Graphical Models Specialization Certificate

Stanford University (Online via Coursera)

2021 - 2021

Mastered the fundamentals of Probabilistic graphical models-Representation, Inference and Learning. Demonstrated understanding of theoretical properties of the two basic PGM representations: Bayesian Networks, and Markov Models, and their use in practice, exact and approximate algorithms for different types of inference tasks, key problems of parameter estimation in both the models, as well as the structure learning task for directed models.

Applied Text Mining in Python

University of Michigan (Online via Coursera)

2020 - 2020

Mastered text handling in Python- regular expressions, cleaning text, and preparing text. Implemented methods for Text Classification and Topic Modelling.

Machine Learning

Stanford University (Online via Coursera)

2020 - 2020

Learned machine learning, data mining, and statistical pattern recognition techniques. Topics learnt include (i)Supervised learning (parametric/non-parametric algorithms, support vector machines, kernels, neural networks). (ii) Unsupervised learning (clustering, dimensionality reduction, recommender systems, deep learning). (iii) Best practices in machine learning (bias/variance theory, innovation process in ML and AI). Learned how to apply learning algorithms for text understanding (web search, anti-spam), computer vision, audio, database mining, etc.

Projects

Lazy Prices Research Paper Implementation

Extracted the sections "Management's Discussion and Analysis", "Quantitative and Qualitative Disclosures about Market Risk", and "Risk Factors" from SEC / EDGAR financial reports which were scraped from the URL database and performed text analysis to compute different variables like positive_score, negative_score, fog_index, polarity_score, uncertainty_score, percentage_of_complex_words, constraining_score, etc for each sections.

She Boss — A website for finding women owned businesses to shop.

Designed and developed a web platform through which users can find women owned enterprises easily, connect new emerging enterprises with the buyers, and help users find new products. Won the Best Gender Equality Hack at the Hack Girl Summer 2020, a global hackathon, among 67 teams.

Shrink.ai — A chatbot that provides mental health support through talk therapy.

Implemented a chatbot that can support people and talk through all their mental woes. Trained with 15,000 rows of conversations from Reddit Mental Health Support, Reddit Depression, etc.

Covid-19 Detection from X-rays — A model that can detect X-rays of Covid-19 affected patients from other Chest X-rays

Built an efficient CNN model to detect Covid19 affected patients' X-rays from a dataset of Chest X-rays of Covid patients, normal people, people with viral pneumonia and lung opacity.

Sales forecasting using CRM data and email interactions between customers and Salespersons

Designed and implemented a forecasting model on a sales dataset to forecast the revenue of the company over coming quarters, using CRM data and email interactions between customers and salespersons.