

AKSHAY KULKARNI

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EDUCATION

NORTHEASTERN UNIVERSITY

Khoury College of Computer and Information Sciences

[Master of Science] MS in Data Science (GPA : 3.713/4.0)

Courses : Algorithms, Data Management & Processing, Database Management Systems, Information Retrieval, Large Scale Parallel Data Processing, Supervised Machine Learning

Boston, MA.
Sep 2018 - May 2020

BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI – DUBAI CAMPUS

B.E. [Hons] in Electronics and Communications Engineering

Related Courses : Digital Image Processing, Communication Systems

Dubai, U.A.E.
Aug 2012 - Jul 2016

SKILLS

Languages : Python, R, SQL, Java, Scala, BASH, MATLAB, Octave, HTML, CSS

Tools & Platforms : IDEA & PyCharm, RStudio, Anaconda, Jupyter, Tableau, PowerBI, GSuite, Git, MySQL, Docker, AWS, GCP

Libraries & Frameworks: Scikit-Learn, NumPy, Pandas, TensorFlow, Keras, SQLA, Django, Flask, DASH, RShiny, Lucene, Spark, MapReduce, FastAI

EXPERIENCE

NORTHEASTERN UNIVERSITY - Teaching Assistant

-CS-3200 [Database Design]

-DS-4100 [Data Collection, Integration and Analysis]

- Designing coursework and assignments, evaluating submissions and student projects.
- Guiding and teaching students in-class / during office hours to help them master & reinforce learning concepts such as tidying, storing, analysing data and employing ML techniques in R or designing databases in MySQL.

Boston, MA.
Sep 2019 – Dec 2019
Jan 2019 – May 2019

PREDIKLY - Junior Analyst

- Worked on data procurement & cleaning as well as generating statistics, visualizations & dashboards for clients to manage their practice with BI Tools & assisted in building predictive analytics solutions.

Pune, India.
Aug 2017 - May 2018

ZIO TECHNOLOGIES L.L.C - Sales and Statistics Intern

- Acquisitioned and analysed product statistics/data for projects and request of tender submissions, and assisted on Systems and AV integration for extensive media projects.

Dubai, U.A.E.
Aug 2015 – Jan 2016

PROJECTS

Distributed Matrix Factorization for Collaborative Filtering/Recommender Systems in Spark

Oct 2019 – Dec 2019

- Developed a scalable parallelized algorithm with near linear speedup to decompose a large & sparse ratings matrix into lower k-dimensional user & item latent factor matrices using Alternating Least Squares method in order to optimize large scale computation of recommendations in explicit collaborative filtering.

Chest X-ray Diagnosis using Convolutional Neural Networks

Oct 2019 – Dec 2019

- Performed classification of 14 different disease categories from the NIH Chest X-ray Dataset containing 112,120 patient records by training modified CNN architectures such as ResNet50 and InceptionV3 using Pytorch, FastAI and Keras in deep learning cloud VM instances.

Decision Support Framework/Multi-Objective Optimization & Visualization Tool

Jun 2019 – Aug 2019

- Deployed a re-usable database-agnostic decision support tool with a React front-end and the core components developed purely in Python to enable a user to perform trade-off analysis.
- Implemented functionality to extract & display a manipulable decision table & calculate the Non-Dominated set of objectives to aid the user with identifying the best min/max multi-objective solution.
- Incorporated methods to plot a spatial interactive Pareto Frontier/Curve for the selected features or objectives

Building a complete Search Engine/ Information Retrieval Model

Mar 2019 – May 2019

- Implemented a retrieval model in Python and Apache Lucene, using several ranking algorithms such as BM25, QLM & Vector Space Model with pseudo-relevance feedback to rank parsed and cleaned documents
- Optimized the search engine by performing stopping, stemming and query expansion with Word2Vec-trained embeddings & generating summarization with Luhn's algorithm

Analytical Nature Classification on O*NET Occupation Database using Gaussian Process Classifier

Mar 2019 – Apr 2019

- Analysed performance of Gaussian Process Classifier on the O*NET database (from the U.S. Department of Labor) with other models like LDA, QDA, RandomForest to quantify the analytical nature of an occupation

WebCrawler with PageRank in Python

Jan 2019 – Feb 2019

- Built a comprehensive web-crawler in Python performing BFS/DFS to generate a web graph & retrieve data from a specified seed page for cleaning & tokenization in order to perform analysis and generate corpus statistics and implemented PageRank algorithm from scratch to rank the crawled pages by their importance.