AKSHAY KULKARNI

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EXPERIENCE

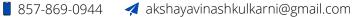**Vitek Lab – Northeastern University**   **Jan 2020 – May 2020**
Research Assistant   *Boston, MA*
- Developed an end-to-end open-source tool to enhance individual & time-series Mass Spectrometry workflows using simulation techniques with Tree-based & Neural network models.
- Implemented new functionality for the Bioconductor MSstatsQC package/library provided in R by leveraging Statistical Process Control & Machine Learning methods.
- Automated identification & inference of sub-optimal performance in workflows using parallelized Ensembles/XGBoost models and Unsupervised Isolation based models.
- Deployed a reactive web application to increase user interaction by enabling them to upload, test and visualize their data remotely for optimal analysis & report generation.

Northeastern University – Khoury College of Computer Sciences   **Jan 2019 – Dec 2019**
Graduate Teaching Assistant   *Boston, MA*
- Guided & mentored students in teams or individually during office hours to enable students in reinforcing & learning new concepts in Database Design & Data Collection & Mining.
- Assisted and managed other TAs in creating new coursework and assignments as well as evaluating/grading student submissions and conducting code reviews.
- Supervised teams of students during the design and implementation of their projects throughout the course.

Predikly   **Feb 2017 - May 2018**
Junior Data Analyst   *Pune, India*
- Performed data cleaning, visualization & development of dashboards for predictive analytics solutions with client sourced data.
- Worked in the sentiment analysis team, executing mining & tokenization for large corpora of texts ranging from customer incidents, reviews, documents & other sources

Zio Technologies   **Aug 2015 - Feb 2016**
Data/Sales Insights Intern   *Dubai, U.A.E.*
- Worked with the analytics team to analyze the sales of various AV components (Security, Digital signage) in parts of the Gulf region.
- Directly worked with the managers to strategize and explore new options based on A/B tests and KPIs to take decisions to help maximize profit from the analysis.

PROJECTS

Topic Modelling & Clustering on Complex COVID19 Twitter Networks
- [*Python, JavaScript, BigQuery, Beam, spaCy, GenSim, VueJS*] ↗
- Developed an end-to-end tool to extract tweets & generate network-graphs to mine & analyze information from any given keyword/area of interest.
- Implemented an ETL pipeline to fetch, filter, process & store tweets from Twitter stream-API to Google BigQuery in order to employ graph-based clustering & NLP algorithms
- Deployed the tool as a web-app using VueJS to display rich 3D visualization of complex networks and various topic/clusters surrounding COVID19 or any given seed term

Distributed Matrix Factorization for Movie Recommender Systems
- [*Scala, Apache Spark, Breeze, AWS- EC2, S3, & Elastic MapReduce*]
- Generated new user recommendations from existing 100 million+ video ratings by implementing the A.L.S. algorithm from scratch in Scala with Spark & Breeze for scalability.
- Efficiently computed & stored about 8 billion+ records which contained predictions of ratings for missing user-video interactions.
- Deployed the algorithm on varying sizes of Spark clusters on AWS-EMR to ascertain viability of factorization for One Class Collaborative Filtering in most real-world datasets/situations.

SKILLS

Programming Languages:
Python, R, Java, Scala, SQL, NoSQL, Bash, JavaScript

Databases: MySQL, MariaDB, PostgreSQL, MongoDB

Distributed Frameworks:
Beam, Apache Spark, Hadoop MapReduce

ML/DL Libraries: H2O, FastAI, SkLearn, TensorFlow, PyTorch, Keras, NLTK, SpaCy, GenSim

Libraries & Frameworks:
NumPy, Pandas, OpenCV, Tidyverse, Lucene, Docker

Cloud Platforms: AWS, GCP, Render, Netlify, Surge.sh, Heroku

Web-Development: HTML5, CSS3, Bootstrap, Bulma, VueJS, ReactJS

DataVis & Webapp Tools: D3, Tableau, PowerBI, ggplot2, Plotly, DASH, Rshiny

VCS & CI/CD: GitHub, GitLab, GitHub-Actions

EDUCATION

Northeastern University
M.S. Data Science
Sep 2018 - May 2020
Boston, MA | *GPA - 3.8/4.0*

Birla Institute of Technology & Science, Pilani – Dubai
B.E. [Hons] E.C.E.
Aug 2012 - Aug 2016
Dubai, U.A.E | *CGPA 7.5/10*

EXTRA-CURRICULARS

Data Science Hub Founding Member - Formed a student organization to provide academic & internship aid by holding outreach events, seminars & forums for all DS program students at NEU.