Akshay Kulkarni

akshay-a-kulkarni.github.io

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Education

09/2018 - 06/2020 M.S. in Data Science - Northeastern University, Boston, MA - [GPA: 3.75 / 4.0]
Courses: *Algorithms, Un/Supervised ML, Large Scale Parallel Processing, DBMS, Information Retrieval, Data Viz*

08/2012 - 07/2016 B.E. [Hons] in E.C.E. - Birla Institute of Tech & Science, Dubai, U.A.E.

Skills

Programming Languages	: Python • Java • R • SQL • Scala • JavaScript • Bash
ML/Deep Learning Toolkits	: PyTorch • TensorFlow • OpenCV • Scikit-img • SpaCy • NLTK • SkLearn LightGBM
DBs, Distributed Processing & Web	: MySQL • Postgres • Mongo • Spark & MapR • Flask • Django • Vue • FastAPI
VCS, CI/CD & Cloud	: Git • GitLab • Docker • AWS • Google Cloud Platform • Github-Actions

Work Experience

07/2020 - Present Research Data Scientist - National Center for Microscopy & Imaging Research

- Implementing CNNs & CV algos for segmentation, detection & morphological analysis of 3D imaging
- Designing DL pipelines for volumetric data that automate & reduce analysis times from weeks to hours
- Built a containerized image pre-processing/enhancing & annotating web-service with a REST API that significantly reduced labeling time & boosted performance for deployed models
- Improving & fixing bugs for CDeep3M - an open-source Deep Learning tool for cellular ultrastructures

02/2017 - 05/2018 Data Analyst - Predikly, Pune, MH, India

- Conducted collection & analysis of client or 3rd party API data & designed dashboards/visualizations
- Built web-crawling, scraping and NLU functionality in Python for processing of large corpora of texts
- Assisted in ingestion, warehousing and querying of data for a financial portfolio analytics/BI platform

Research/Academic Experience

01/2020 - 06/2020 Machine Learning Research Assistant - Vitek Lab:NEU

- Devised an unsupervised approach to detect anomalous points in sensor data with Isolation Forests
- Implemented an intuitive easy to use UI and tool for root-cause analysis of failure behavior in runs
- Improved & added functionality to predict & interpret instrument performance degradation using statistical, simulation & ensemble methods in Python & R allowing for auto calibration & correction.
- Restructured legacy code, fixed dependency mgmt & dockerized the tool for open-source sharing

01/2019 - 12/2019 Head Teaching Assistant - Northeastern University

- Guided students in office hours/labs for acquiring and using concepts for DB design & Data mining
- Onboarded newer TAs & assisted faculty with planning & restructuring of the course & assignments.
- Conducted code reviews & supervised during progressive design/execution of end-to-end projects

Projects

02/2021 - 03/2021 Exploring Neural & Classical Ranking Models on Microsoft Learning To Rank Dataset
akshay-a-kulkarni.github.io/ltr — [*Python, TensorFlow, TF-Ranking, LightGBM, SkLearn, Requests, Google Colab*]

01/2020 - 05/2020 Graph Clustering/Community detection & NLP on Networks generated from COVID19 Hashtags & Tweets
hashtag.surge.sh — [*Python, JavaScript, BigQuery, Beam, spaCy, GenSim, D3, VueJS, Surge.sh*]

09/2010 - 12/2019 Distributed ALS for Large-Scale Matrix Factorization in Collaborative Filtering & Recommender Systems
[*Scala, Apache Spark, Breeze, AWS : EC2, S3, & Elastic MapReduce*]