

Akshay Kulkarni

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Education

M.S. in Data Science - Northeastern University, Boston, MA - [GPA: 3.75 / 4.0] Sep 2018 – June 2020
Courses: Algorithms, Un/Supervised ML, Large Scale Parallel Processing, Databases, Information Retrieval, Data Visualization
B.E. [Hons] in E.C.E. - Birla Institute of Tech & Science, Dubai, U.A.E. Aug 2012 – Aug 2016

Skills & Interests

Programming Languages : Python • Java • R • SQL • Scala • JavaScript • Bash
ML/Deep Learning Toolkits : PyTorch • TensorFlow • OpenCV • Scikit-imag • 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
Interests : Panoptic Segmentation • CV • NLP • Rec/Ranking Systems • ML-Ops • FullStack Dev

Work Experience

Research Data Scientist, National Center for Microscopy & Imaging Research, San Diego, CA. Jul 2020 – Present

- Developing Deep Learning & CV tools for segmentation, detection & morphological analysis of 2D/3D imaging data
- Designing & prototyping modifications for models/tools to improve auto-seg performance on new data & edge cases
- Improved data processing & annotation pipelines by refactoring & building modular containerized Rest APIs/services
 - Integrated the API in a web-based training & inference tool to reduce re-annotation, re-training & output serving times
- Maintained & added features/fixes for CDeep3M2 - a plug-&-play DL segmentation pipeline for cellular ultrastructures

Data Analyst, Predikly, Pune, MH, India. Feb 2017 – May 2018

- Designed dashboards & visualization tools to aid in collection & analysis of data consumed via clients or 3rd party API
- Built web-crawling & natural language analysis functionality in Python for processing of large corpora of media texts
- Assisted in warehousing & standardization of data with SQL for financial portfolio management Analytics/BI platform

Academic Experience

Machine Learning Research Assistant, Vitek Lab, Boston, MA. Jan 2020 – Jun 2020

- Devised an unsupervised approach to annotate & detect anomalous points in sensor data by utilizing Isolation Forests
- Implemented a UI and provided an intuitive easy to use visualization for root-cause analysis of failure behavior in runs
- Improved & added functionality to predict & interpret instrument performance degradation using statistical analysis, simulation & ensemble models in Python & R allowing for automatic calibration & correction.
- Restructured legacy code, improved dependency management & Dockerized the toolkit for open-source distribution

Head Teaching Assistant, Northeastern University, Boston MA. Jan 2019 – Dec 2019

- Guided students during office hours/labs to aid in implementation of concepts in Database Design & Data mining
- Trained/helped newer TAs & assisted faculty with planning & restructuring of the course & assignments as Head-TA
- Conducted code reviews & supervised teams during progressive design & execution of end-to-end term projects.

Projects

Graph clustering & NLP on Complex Networks generated from mined COVID19 Tweets Feb 2020 – May 2020
[Python, JavaScript, BigQuery, Beam, spaCy, GenSim, D3, VueJS, Surge.sh] hashtag.surge.sh

Employing ResNets/InceptionNets with optimizations for Diagnosis of Chest Radiographs Sep 2019 – Jan 2020
[Python, PyTorch-FastAI, Keras, Google Compute Engine, Google Cloud Storage]

Large-Scale Distributed Matrix Factorization for Collaborative Filtering in Recommender Systems Oct 2019 – Dec 2019
[Scala, Apache Spark, Breeze, AWS - (EC2, S3, & Elastic MapReduce)]