RAZI MAHMOOD

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Skills Summary

- Deep Learning, Machine Learning, Data Science, Data Analysis, Statistical methods(A/B Testing, Regression), Data Mining, Data ETL, Data Visualization, Making technical presentations.
- Python, Java, R, data querying, modeling with SQL, MATLAB, Jupyter Notebook, Deepnote, Visual Studio, IntelliJ, Eclipse IDE, Sublime, Google CoLab.
- Pandas, Seaborn, Tensorflow, Keras, Pytorch, Scikit-learn, Numpy, Nltk, Gensim, Spacy, Matplotlib, U-Net, VGG16, ResNet50, CNN, Word2Vec, BERT

Education

B.A. in Data Science, University of California, Berkeley, May 2022

- Relevant Coursework: Natural Language Processing, Intro to AI, Data Science & CS Principles, Data Structures, Cognitive Science, Discrete Math & Probability, Deep Learning, Computer Architecture, Data Inference & Decision Making, AI Ethics, Domain Emphasis: Cognition.

Experience

IBM, San Jose, CA

Machine Learning Research Apprentice, 01/2021 – 01/2022

- Researched innovative machine learning algorithms for IBM Watson AI Ops in Python focused on improved anomaly detection in IT logs (HDFS). Overall Mentor: Dr. Rama Akkiraju, IBM Fellow, CTO AI Ops.
- The new ML model, ContrastBERT, achieved precision of 0.99 and recall of 0.93. Paper submitted to IJCAI.

Hyperfine Research, Inc., Guildford, CT

Machine Learning Summer Intern, 08/2021 – 11/2021

- Developed automated image labeling algorithm in Python that extracted neurological disease labels from brain MRI report using NLP models. Extracted 7200 labels from 600 reports with 88% precision and 70% recall.
- Enabled rapid machine learning model build cycles to accelerate product development. Developed an ease-of-use interface to record clinician annotation leading to 10 fold decrease in data labeling time.
- Made technical presentations to the team on analysis results.

Xoran Technologies, Ann Arbor, *MI*

Data Science Summer Intern, 06/2021 – 08/2021

- Developed Python code for image segmentation using SimpleITK, Numpy, Python, Keras, and Tensorflow libraries. Combined panoptic DL models from Computer Vision with U-net for head and neck cone beam CT achieving a Dice coefficient of 0.68 for 9 structures.
- Gave technical presentation and trained Xoran staff in using ITKSnap for 3D ground truth segmentation. Obtained hands-on experience of data preparation, cleaning, processing, and algorithms development.
- Please see website for other projects involving machine learning on general images.

Publications:

- R. Mahmood, T. Syeda-Mahmood, "Automatic detection of dilated cardiomyopathy in cardiac ultrasound videos," in Proc. American Medical Informatics Association (AMIA) Annual Conference, Washington, D.C., Nov., 2014.
- R. Mahmood, T. Syeda-Mahmood, "Automatic detection of cardiac aneurysms in cardiac ultrasound videos," in Proc. International Symposium on Biomedical Imaging (ISBI), New York, April 2015.
- N. Shrivastava, R. Mahmood, T. Syeda-Mahmood, "Spatially-preserving flattening in deep learning for location-aware classification," in Proc. International Symposium on Biomedical Imaging (ISBI), Kolkatta, India, 2022.
- R. Mahmood, Xiatong Liu, A. Xu, R. Akkiraju, "ContrastBERT: Supervised Contrastive Learning of BERT-Encoded IT logs for Anomaly Classification," submitted to IJCAI 2022.