CHETAN KUMAR

(508)-441-7120 | ckumar@umassd.edu | https://www.linkedin.com/in/chetankumar92 | http://chetan-kumar.com

RESEARCH INTEREST

Machine Learning, Deep Learning, Transfer Learning, Cross-View Action Recognition & Prediction

EDUCATION

University of Massachusetts Dartmouth - Dartmouth **Sep 2018 - Present**
PhD in Engineering & Applied Science (Computer Science and Information Systems) (GPA: 3.8/4.00)

University of Massachusetts Dartmouth - Dartmouth **Sep 2016 - Aug 2018**
MS in Data Science (GPA: 3.81/4.00)

Shaheed Zulfikar Ali Bhutto Institute of Science and Technology - Karachi **Sep 2014 - Jun 2016**
MS in Computer Science (GPA: 3.45/4.00)

Shaheed Zulfikar Ali Bhutto Institute of Science and Technology - Karachi **Sep 2010 - Jun 2014**
BS in Computer Science (GPA: 3.26/4.00)

WORK EXPERIENCE

University of Massachusetts Dartmouth - Dartmouth **Sep 2018 - Present**
Research Assistant (Advisor: Dr. Ming Shao)

- **Cross-Database Mammographic Image Analysis through Unsupervised Domain Adaptation**
  Improved classification accuracy of unlabeled target mammogram image dataset by using different transfer learning methods to address the issue of fewer training data on target image dataset.
- **Skeleton Based Action Recognition using Convolutional Neural Network**
  A skeleton based live working model for action recognition was developed to explore the biasness present between synthetic and non-synthetic datasets. Kinect V2 is used to get Skelton representation of 2 persons interactions. http://tiny.cc/uq370y

University of Massachusetts Dartmouth - Dartmouth **Oct 2017 - May 2018**
Data Analyst

- Carried out statistical analysis on Nursing School admissions and course enrollment & results data and used JavaScript and D3 to visualize different patterns and trends for students' performance against the courses
- These results effectively helped the school to maintain and redesign their curriculum to get most success rate
- First time a machine learning model using R language is built for this Nursing School to predict successfulness for each candidate appearing in the upcoming NCLEX-RN (Nursing License Exam) and achieved a significant performance higher than 94%

University of Massachusetts Dartmouth - Dartmouth (Science and Engineering Center) **Sep 2017 - May 2018**
Tutor (Part Time)

- Helped Computer Science undergrads to understand different programming and logic building concepts
- Explained different Mathematics concepts from Linear Algebra, Statistics, Calculus and other to undergrads

Web Enthusiasts - Karachi **Jun 2014 - Oct 2015**
Software and Web Developer

- Developed and maintained static and dynamic websites for corporate clients with responsive interfaces
- Optimized content for fast and interactive user experience with server interaction through PHP and MySQL

TECHNICAL SKILLS

Languages	Python, R, Matlab, SQL, C/C++, JavaScript, D3
Libraries	Tensorflow, Numpy, Pandas, NLTK
Data Tools	Tableau, Rapid Miner
Machine Learning	CNN, GAN, Classification, Regression, Feature Engineering, Transfer Learning
Tools	LaTeX, Git, Jupyter Notebook, RStudio

PUBLICATION

D. Kumar, **C. Kumar** and M. Shao, "Cross-database mammographic image analysis through unsupervised domain adaptation" 2017 IEEE International Conference on Big Data (Big Data), Boston, MA, 2017

POSTER PRESENTATION

- Cross-database Mammographic Image Analysis through Unsupervised Domain Adaptation, 2017 New England Computer Vision Workshop, Boston, MA **Nov 2017**
- Cross-view Action Recognition via Joint Dictionary & Transfer Learning, 2018 New England Computer Vision Workshop, Boston, MA **Nov 2018**

ACADEMIC PROJECTS

- **H-1B Visa Petitions Data Analysis:** Visualized and analyzed Kaggle data using R and D3 to determine important trends and facts such as total visa petitions, total candidates in different job categories from each state. Webpage: http://tiny.cc/7p370y
- **Computational Reproducibility:** Reproduced Paper **"Real Time Robust L1 Tracker Using Accelerated Proximal Gradient Approach"** using Matlab and reproduced related Papers for Comparing Experimental Results.
- **Text Processing and Text Mining:** Jupyter Notebook was configured on Stampede (Super Computer) to access it on local machine for performing the text processing and text mining on unstructured data by using Python NLTK library.

PROFESSIONAL SERVICES

- **Reviewer,** Association for Advancement of Artificial Intelligence (AAAI) **2018 & 2019**
- **Reviewer,** International Joint Conference on Artificial Intelligence (IJCAI) **2018**
- **Reviewer,** Journal of Electronic Imaging (JEI) **2018**

SOFT SKILLS

- Developed strong presentation and communication skills by working with different teams and organizations and specially they got highly improved when working with Nursing School people with no technical background, where discussed and communicated with them about technical details in layman's terms
- Excellent time management skills
- I believe in brainstorming and jotting down every idea and approach and also testing and prototyping before complete development and deployment