Chetan Kumar

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INTERESTS

Machine Learning, Computer Vision, Transfer Learning

EDUCATION

- **M.S in Data Science** *August, 2018*
  University of Massachusetts, Dartmouth GPA: 3.81/4.00
- **M.S in Computer Science** (Full Scholarship, 2 Years) *June, 2016*
  Shaheed Zulfikar Ali Bhutto Institute of Science and Technology, Karachi GPA: 3.45/4.00
- **B.S in Computer Science** (Full Scholarship, 4 Years) *June, 2014*
  Shaheed Zulfikar Ali Bhutto Institute of Science and Technology, Karachi GPA: 3.26/4.00

WORK EXPERIENCE

- **University of Massachusetts, Dartmouth (Department of Nursing Sciences)** *September 2017 – Present*
  Data Analyst
  - Analyzed data pertaining to admissions and course enrollment to find students performance for updating policies such as required GPA for admission, courses grade criteria, etc. and visualized different patterns and trends using D3
  - Developed a model to predict successful NCLEX-RN (Nursing License Exam) candidates using R language
- **University of Massachusetts, Dartmouth (Science and Engineering Center)** *September 2017 – Present*
  Tutor
  - Assisting students by providing one on one tutoring
  - Teaching different courses related to Computer Science (Object Oriented Programming– Java, Software Specification and Design, etc.) and Mathematics (Integration, Calculus, etc.)
- **Web Enthusiasts** *June 2014-October 2015*
  Software and Web Developer
  - Designed and Developed Software and Web Applications
  - Used HTML, CSS for front-end development and PHP for backend development
  - Developed CMS and ecommerce websites using PHP and used MySQL for managing database
- **Wi-tribe (Information Technology (IT) Department)** *June 2013 – August 2013*
  Internee
  - Worked with Wi-tribe IT team who provide technical services for all the computers, printers, and other hardware and websites at Wi-tribe head office and also maintains them
  - Assisted employees with their systems, and also in the use of IT equipment and conference system
- **Pakistan Telecommunication Limited (Pakistan Internet Exchange)** *June 2012 – August 2012*
  Internee
  - Developed a web based internal system to put the data at one place, for querying easily
  - Build a dashboard which supports insert, update, search, report generation facilities
  - Used PHP and MySQL for backend and database

SKILLS

- **Programming Languages:** Python, R, Matlab, HTML/CSS/JS, C(Parallel Programming) , C++
- **Data Tools:** MySQL, D3, Rapid Miner, Numpy, Pandas
- **Machine Learning:** Logistic Regression, Decision Trees, Neural Network, Random Forest, LibSVM
- **Other Tools:** Jupyter Notebook, MS Office, Git, Latex, Linux, Windows

Research Experience

- **Conference Papers**
  - Deepak Kumar, **Chetan Kumar**, Ming Shao, **Cross-Database Mammographic Image Analysis through Unsupervised domain adaption**, 2nd International Workshop on Big Data Transfer Learning in Conjunction with IEEE Big Data Conference, 2017.

- **Workshop Presentation**
  - Oral Presentation on Cross-Database Mammographic Image Analysis through Unsupervised domain adaption in **2017 New England Computer vision workshop** held at Northeastern University, Boston.
- **Thesis**
  - **Sentiment Analysis of Roman Urdu Text:** Roman script is an alternative way to write Urdu language using English alphabets. Novel approach for writing Roman Urdu Text was proposed based on Phonetic Keyboard and Heuristics were developed to normalize Roman Urdu Text into a normalized format. Polarity level of the text is defined after processing through Levenshtein algorithm.

Professional Services

- **Conference (External) Reviewer**
  - Association for Advancement of Artificial Intelligence (AAAI) *2017*
  - International Joint Conference on Artificial Intelligence (IJCAI) *2018*
  - Journal of Electronic Imaging (JEI) *2018*

Professional Associations

- Institute of Electrical and Electronics Engineers (IEEE)

Academic Projects

- **Deep Learning for Human Detection and Tracking:** Humans are detected in multi-view videos using RCNN models and then annotated videos are fed to Improved Dense Trajectory and MoSIFT methods for extracting deep learned features. Features will be transferred to common subspace using different transfer learning methods and non-linear SVM will be used for classification.
- **Cross-Database Mammographic Image Analysis through Unsupervised domain adaptation:** Mammogram images features are extracted using end to end deep learning model. Different transfer learning methods (TCA, BDA, CORAL) are explored for the cases where feature space changes across image databases, and when target dataset has no labels. Classification is done using non-linear SVM with different kernels.
- **Business Analytics and Data Mining:** Worked on **KKBox's Churn Prediction Challenge** from Kaggle.com, to explore data using different visualization to find out which variables are significant in predicting churn. Used different machine learning approaches to make a model of churn prediction on the given data.
- **Data Visualization:** Worked on **H-1B Visa Petitions** data set from Kaggle.com. Visualized data for number of visa petitions from all over the US, Number of applicants in each job category in each state, Number of incoming international students and number of visa petitions each year.

  URL: http://chetan-kumar.com/data-visualization/index.html
- **Computational Reproducibility:** Reproduced Paper **"Real Time Robust L1 Tracker Using Accelerated Proximal Gradient Approach"** using Matlab and Reproduced Papers **"Incremental Learning for robust visual tracking"** and **"Real-time tracking via online boosting"** for Comparing Experimental Results. Drawn relationship between Original Results and Reproduced Results by producing Charts and Table of the Experiments Performed.
- **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 using the Python NLTK library. **URL:** https://goo.gl/pedZYd