

## Deepak Kumar

337-781-1568 | <https://www.linkedin.com/in/deepak-kumar-12977843> | [dkumar2@umassd.edu](mailto:dkumar2@umassd.edu)

### INTERESTS

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Deep Learning, Computer Vision, Transfer Learning, Data Visualization

### EDUCATION

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**M.S in Data Science** December, 2017

University of Massachusetts, Dartmouth 3.85/4.00

**B.S in Computer Science,** June, 2013

Shaheed Zulifkar Ali Bhutto Institute of Science and Technology, Karachi 2.92/4.00

### WORK EXPERIENCE

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**University of Massachusetts, Dartmouth – Research Assistant** May, 2017 – September, 2017

- Multi View Action Recognition using the features extracted from Dense Trajectories and Using two stream model to get deep learned features and match the interest points using the Bipartite Graphs in multiple views

**Center for Data Science –EduEnrich -Data Analyst** Dec, 2013-Dec, 2015

- Responsible for Design/Development of Relational Databases for collecting data,
- Processing Data, and maintain integrity during extraction, manipulation,
- Analyzing the Data, conducting statistical analysis using R, and Developing Recommendations

**Pakistan Telecommunication Limited -Internee- Pakistan Internet Exchange** June 2012 – August 2012

- Responsible for Design and Development of Web Portal with Database to transfer their Spread Sheet Data over databases for their internal use

### SKILLS

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- **Programming Languages:** Python, R, Matlab, HTML/CSS/JS, C(Parallel Programming) , C++
- **Data Tools:** Tableau, scikit-Learn, Matplotlib, Numpy, Pandas, NLTK, D3, RapidMiner
- **Machine Learning Packages:** Keras, Tensor Flow, LibSVM

### Certificate Courses

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#### Certificate of Accomplishment

- **Coursera | Jhon Hopkins University, USA :** The Data Scientist's Toolbox ,The R Programming , Data cleaning and Exploring
  - **University of Nicosia, Cyprus :**Introduction to Digital Currencies
- **Center for Excellence in Journalism | Institute of Business Administration, Pakistan**
  - **dBootCamp Karachi (Data Bootcamp for Journalists)**

### Research Experience

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- **Mamographic Image Analysis through Transfer Learning (In Progress):** Explore the Usage of Transfer Learning for Breast Cancer diagnosis to address the issue of fewer training data on target image dataset.
- **Action Recognition in Multi view Dataset (Master's Thesis – In Progress):** Features extracted from Dense Trajectories and using two stream model to get deep learned features which will match the interest points using the Bipartite Graphs in different views.

### Conference (External) Reviewer

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- Association for Advancement of Artificial Intelligence (AAAI) 2018

### Academic Projects

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**Visual Human Action Recognition through Dense Trajectories (Master's Project):** Features from Videos are extracted using Dense Trajectories method, the performance is evaluated using the bag-of-features approach, and non-linear SVM with different Kernels used for classification.

**Data Warehousing and Business Intelligence:** Compare the query execution time using the Materialized views and cubes, TPC-H queries are used materialized views and cubes are created, and convert to TPC –H queries to MDX queries to access the cubes Data.

**Data Mining and Business Analytics:** Worked on smart watches sensor data set, to explore data using different visualization, find out the Data uniqueness, Outliers and classify and build the model and predicate the new data set using the trained data model.

**Data Visualization:** Worked on US Election 2016 Data set. Visualization of Each Candidate Campaigning Expenses, Number of visits they made to each state, and No of counties they won, what other demographic factors affect their results. **URL:** <https://bl.ocks.org/dkrathi457/raw/91e3cf725d6c7fb0a9a9898243105b19/index.html>

**Computational Reproducibility:** Reproduced a paper “**Deep Compositional Captioning: Describing Novel Object Categories without paired Training Data**” using python and caffe. Drawn the relationship between Original Results and Reproduced Results. The paper didn’t completely reproduced, but some part of the paper was reproduced.

**Visual Analytics – Twitter Sentiment Analysis:** Created a web App, on the frontend user draws a circle on map to select the area on map, with the text box to write a hashtag, on the backend all tweets are processed using the Natural Language processing library and Machine Learning Techniques. All backend processing is done using the Scala, Sql and Java. And the analyzed data is visualized using the D3.

**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://github.com/dkrathi457/DSC-520-HPC/blob/master/final-DSC520.ipynb>