Chetan Kumar

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EDUCATION

- **University of Massachusetts Dartmouth** — Dartmouth, MA
  Ph.D. in Engineering and Applied Science — *Sep. 2018 - Aug. 2021*
    - Department of Computer and Information Science (Full Scholarship)

- **University of Massachusetts Dartmouth** — Dartmouth, MA
  MSc. in Data Science — *Sep. 2016 - Aug. 2018*
    - Program of Data Science

- **Shaheed Zulfikar Ali Bhutto Institute of Science and Technology** — Karachi, Pakistan
  BSc. in Computer Science — *Aug. 2010 - June 2014*
    - Department of Computer Science (Full Scholarship)

RESEARCH INTEREST

Machine Learning, Deep Learning: Privacy protection through Adversarial Attack, Multi-view graph based learning, Multi-view action recognition

EXPERIENCE

- **MIND Lab, UMass Dartmouth** — Dartmouth, MA
  Graduate Research Assistant, Supervisor: Dr. Ming Shao — *Fall. 2017 - Present*
    - **Adversary for Social Good: Protecting Familial Privacy through Joint Adversarial Attacks (AAAI 2020)**: A Graph Neural Network (GNN) based joint adversarial attack model is designed to prevent family information leakage through social networks. Specifically perturbation on both node features and graph are applied and experiments on popular visual kinship dataset have shown promising results by our defense strategy.
    - **Cross-Database Mammographic Image Analysis through Unsupervised Domain Adaptation (Big Data 2017)**: Improved the 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 (Masters Practicum)**: 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.

- **College of Nursing and Health Sciences, UMass Dartmouth** — Dartmouth, MA
  Data Analyst — *Oct. 2017 - May. 2018*
    - Carried out statistical analysis on Nursing School admissions and course enrollment & results data
    - JavaScript and D3 are used 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

TEACHING EXPERIENCE

- **Graduate Teaching Assistant** — UMass Dartmouth
  Department of Computer and Information Science — *Spring 2019 - Present*
    - CIS 272: Introduction to Computing Systems
    - CIS 280: Software Specification and Design
    - CIS 361: Models of Computation

- **Guest Lecturer** — UMass Dartmouth
  Department of Computer and Information Science — *Fall 2019*
    - Guided students in Data Mining course projects

TECHNICAL STRENGTHS

Languages: Python, Matlab, R, C/C++, Javascript, D3
Deep Learning Tools: Keras, TensorFlow, PyTorch
Data Tools & Libraries: Numpy, Pandas, NLTK
Machine Learning: Classification, Regression, Feature Engineering, Transfer Learning
Other Tools: LaTeX, Git

PUBLICATIONS

1. **C. Kumar**, R. Ryan and M. Shao, Adversary for Social Good: Protecting Familial Privacy through Joint Adversarial Attacks in 2020 AAAI Conference on Artifical Intelligence

2. D. Kumar, **C. Kumar** and M. Shao, Cross-database mammographic image analysis through unsupervised domain adaptation in 2017 IEEE International Conference on Big Data

POSTER PRESENTATIONS

- Cross-view Action Recognition via Joint Dictionary Transfer Learning, 2018 New England Computer Vision Workshop, Boston MA (Nov 2018)

- Cross-database Mammographic Image Analysis through Unsupervised Domain Adaptation, 2017 New England Computer Vision Workshop, Boston MA (Nov 2017)

AWARDS

Travel Grant: Received AAAI 2020 Author Travel Grant Award

PROFESSIONAL SERVICES

Reviewer: Journal of Electronic Imaging (JEI), IEEE Computational Intelligence Magazine, International Conference on Data Mining (ICDM), Conference on Information and Knowledge Management (CIKM), IEEE Conference on Big Data (IEEE Big Data), European Conference on Artificial Intelligence (ECAI), Conference on Computer Vision and Pattern Recognition (CVPR)

Program Committee: Association for Advancement of Artificial Intelligence (AAAI)