VIBHA BELAVADI

Email | +1 469-450-9896 | Homepage | LinkedIn

EDUCATION

The University of Texas at Dallas, **Richardson TX** GPA 3.71/4.00
MS+PhD in Computer Science **Fall 2021 (expected)**
Focus: Adversarial Machine Learning & Deep Learning for Good; Data Privacy & Security.

Birla Institute of Technology and Science (BITS-Pilani), Rajasthan, India
B.E.(Hons.) in Computer Science **Spring 2014**

RESEARCH WORK

- MultiModal Deception Detection: Accuracy, Applicability, Generalizability; **IEEE TPS 2020.**
  Vibha Belavadi, Yan Zhou, Jonathan Z Bakdash, Murat Kantarcioglu, Daniel C Krawczyk, Linda Nguyen, Jelena Rakic, Bhavani Thuraisingham (UT Dallas & U.S. Army Research Lab).
- Attacking Machine Learning Models for Social Good; **GameSec 2020**.
  Vibha Belavadi, Yan Zhou, Murat Kantarcioglu, Bhavani Thuraisingham (UT Dallas).
- Reviewer for KDD, ACM CODASPY, IEEE TDSC, WebConf, PAKDD and SDM.

EMPLOYMENT

Data Scientist Intern, Swiss Re at Armonk, New York **Summer 2018**

- Quantitative modeling and data science for life insurance, property and casualty domains.
- Designed and implemented modeling algorithms using natural language processing.
- Performed feature engineering, synthetic data generation and dictionary creation on large datasets to determine the efficacy of the potential machine learning algorithms.
- Designed and tested ETL (Extract, Transfer and Load) pipelines.
- Conducted extensive quantitative research on health insurance to build flexible morbidity pricing models.

Software Engineer Intern, **SAP Labs** at Bengaluru, India **Fall 2013**

- Full stack development and enhancement in frontend/backend for SAP BusinessObjects.
- Designed and developed BOUM2 backend testing framework for invoice scheduling.
- Integrated changes in the ByD Suite and rolled out it in the Release 1402.

SKILLS

- Technologies: Python, Java, TensorFlow, PyTorch, Keras, Pandas, Spark, Scala, Hadoop.
- Methodologies: Object Oriented Programming, Agile/Scrum Methodologies.
- MOOCs: Deep Learning Specialization in Coursera (deeplearning.ai).

ACADEMIC PROJECTS

- **Privacy Preservation of Sensitive Attributes**: Successfully generated adversarial examples to misclassify standard state of the art Deep Learning Models for multiple sensitive attributes such as age, gender etc. for social good. Used TensorFlow, Keras and Python.
- **Human Expressions Detection**: Programmed/trained OpenCV to detect 'shh expression' and 'wink expression' in images and live video using HAAR cascade classifiers to achieve 85%+ accuracy.
- **Web Search Engine for food**: Designed/developed topic-based web search engine using Apache Nutch, Apache Solr, Apache Lucene Page rank/HITS, query expansion & clustering.
- **Probabilistic graphical modeling**: MCMC sampling, Bethe Free energy approximation, Loopy Belief Propagation, Approximate MAP inference, Gibbs Sampling, MLE & Bayesian Structure Learning using MATLAB.
- **Data Modeling and Analytics**: Implemented Monte Carlo Simulations, US Elections forecast, data modeling, Bootstrap library, hypothesis acceptance and rejection, regression fitting and diagnostics using R, R Studio.