Sanjida Akter Sharna

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Education

PhD in Computer Science **August, 2021 - Present**
Tennessee Tech University *Cookeville, TN*
Key Coursework: Machine Learning, Data Mining, Resilient DevOps, Internet Security

B.Sc. in Computer Science and Engineering **January, 2014 - January, 2018**
Military Institute of Science and Technology (MIST) *Dhaka*
Key Undergraduate Coursework: Algorithm, Data Structure, Operating Systems, Databases, Computer Architecture

Experience

Graduate Teaching Assistant **August, 2021 - Present**
Tennessee Tech University *Cookeville, TN*

Robotic Process Automation (RPA) developer **October , 2018 - November, 2019**
Kazi IT Center Ltd. (KITC) *Dhaka*
Performed analysis of the whole operation process and provide solutions to reduce repetitive tasks by developing robotic process automation system of those particular issues. Used NTTAT (NTT Advanced Technology Corporation)'s Robotic process automation software named- "WinActor(OR-5000)".

Computer and Programming Skills

Programming Languages and Platforms: Python, C++, C, Java, HTML, CSS, SQL, Git, LaTeX
Frameworks & Tools: Numpy, Pandas, Tensorflow, Keras, Scikit-learn, Jupyter, Matplotlib
Machine Learning: Classification, Regression, Artificial Neural Network, K-Nearest Neighbor(KNN) Classifier, Naive Bayes Classifier, Clustering, K-Means Clustering, K-fold Cross Validation, Sentiment Analysis, Text Classification
Deep learning: Multi-layerPerceptron(MLP),ConvolutionalNeuralNetwork(CNN)
Natural Language Processing: Bag-of-Words (BOW), Term Frequency Inverse Document Frequency(TF- IDF), Count Vector, Stemming, Stop Words

Research Projects

Mitigation of Potential Adversarial Attack in Convolution Neural Network
In this project,one of the adversarial machine learning technique and tactic from MITRE threat matrix is implemented to predict and figure out the adversaries a machine learning model faces being attacked. For this FGSM adversarial attack on convolution neural network was applied on MNIST dataset.

Sentiment Analysis Using Twitter Data.
Developed a sentiment analysis tool to classify tweets as positive, negative or neutral.Developed a tool that clusters tweets for particular airlines together and selects a representative tweet from each cluster characterizing the cluster. Also developed a frequency count tool for counting positive and negative tweets.

Prediction of Home Price Using Linear Regression
Predicted home price using different ways of regression- least squares only, ridge regression, lasso and elastic net.

Infant Crying Reason Detection System
The system was made to perceive baby's crying frequency level that had been developed and trained to recognize the reasons/emotions (hungry, sleepy, irritated, discomfort etc.) of crying.

Smart Menu Selection and Automatic Food Serving System
Developed for the automation of restaurant system.

Weather Prediction System
Experimental analysis using variant parameters of climate condition to predict future climate. 16 years of climate data of Gopalganj, collected from the meteorological department of Bangladesh, were used for this approach.

MIST Careerpedia (Web Application, Database: Oracle)
A web application which lets recruiters, professors, students, job applicants connect online and socialize.

Awards

1st RUNNER UP in MIST inter-department interfacing project fair, January 2018
1st RUNNER UP in National Women Hackathon-2017 powered by ICT division, July 2017
4th RUNNER UP in WE CAN – Daffodil Apps Fellowship 2016