Reetam **Taj**

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Research History

2019-10 - Current

Research Assistant

Arolytics Inc., Halifax

Funded by: **Nova Scotia Business Inc Voucher Grant (NSBI)**

This project revolves around building a framework that securely stores user's credentials and data generated by users of a web application. A thorough literature survey was conducted to ensure the state of the art and quality of the framework. During the implementation phase, different hashing algorithms, data encryption algorithms, key exchange techniques, and 2 factor authentication will be implemented

2019-08 - Current

Research Assistant

Department Of National Defense, Canada, Halifax, Not Applicable

Funded by: **IDEas, Canada**

The project falls under the umbrella -" Understanding Cyber Intent and detecting cyber-attacks". As a part of this project, we are building a context aware and machine learning framework in order to predict, detect, classify and differentiate cyber-attacks. The proposed framework is a representation of collaborative intrusion detection system (IDS) that comprises both Network based IDS and Host based IDS. The designed framework will be validated on testbed with a real time simulation of attacks.

2019-06 - 2019-08

Research Assistant

Arolytics Inc, Halifax

Funded by: **Nova Scotia Business Inc Voucher Grant (NSBI)**

This research project involved building a solution to generate plume concertation for specific gas emission plants. A set of solution was developed in python and JavaScript from the scratch in order implement the Gaussian model based plume dispersion algorithm and visualizing the concentration in a web-interactive map.

2018-12 - 2019-02

Research Assistant

Spritely Technologies, Halifax

Funded by: **Nova Scotia Business Inc Voucher Grant (NSBI)**

Provided literature survey on real time communication protocol to implement chat

system and notification system. Develop a functioning demo on implementing third party chatting engines such as PubNub, Pusher, SendBird and ChatCamp.

Academic Projects

Title: **Automatic classification of different vehicles using PyTorch.**
Course: **Machine Learning for Big Data, Fall 2018**
Pytorch was used to implement several classification techniques. Mainly Convolution Neural Network models such as ResNet18 and ResNet34 was used to enhance the efficiency of the classifiers used.
Title: **Automatic classification of tweets using text classifiers into different business categories.**
Course: **Advanced Topics in Natural Language Processing, Winter 2019**
Different text classification, machine learning and deep learning techniques were used to classify tweets according to the business scenarios posted by different business organizations. Several natural language processing techniques such as Bag of Words, TFIDF, Stemming, Word embedding have been used to enhance the efficiency of the classifiers used. This solution of the project will help to classify and analyze the business domains and business requirement of a business organization and let the other companies from that domain in the market know that the organization that has posted the tweets wants to extend their business into a specific field.

Education

2018-09 - **2019-04**   **MCS: Computer Science**
Dalhousie University - Halifax, Canada
Thesis topic:
Supervisor: Dr. Srinivas Sampalli, Computer Science

2010-08 - **2014-06**   **B.Tech: Computer Science**
WBUT - Kolkata, India

Work Experience

08/2019-Present **Teaching Assistant and Marker**,
Dalhousie University
Course: **CSCI2110 (Data Structures)**
A TA for this course is required to manage and run labs. This includes giving presentations and guiding students through the course project and assignments. Managing the learning management system (Brightspace), marking assignments, creating and distributing rubrics and sample solutions are included.
08/2019-Present **Teaching Assistant and Marker,**
Dalhousie University
Course: **CSCI3171 (Network Computing)**
Taken care of labs, made presentations, guided students, and marked reports and

exams. A TA of this course requires to help student in understanding top-down view of the layered architectural elements of communication systems, focusing on the Internet and TCP/IP that includes client/server systems, packet switching, protocol stacks, application protocols, socket programming, remote service calls, reliable transport, UDP, TCP, multithreading and security.

08/2019-Present **Marker,**

Dalhousie University

Course: **CSCI 4171/6704 (Advanced Topics in Networking)**

I was involved in marking assignments and managing group project and presentations.

01/2019-04/2019 **Teaching Assistant and Marker,**

Dalhousie University

Course: **CSCI2121 (Introduction to Computer Organization using Assembly Language)**

Taken care of labs, made presentations, guided students, and marked reports and exams. This lab revolves around working individually towards designing hardware circuits using Verilog,

01/2015-07/2018 **Senior Systems Engineer**

Infosys Limited, Trivandrum, India

Worked in Retail and Logistics domain. Worked as a Unix Administrator. Handled large scale database

Professional Activites

01/2019–Present **Residence Learning Community Assistant**

Dalhousie University, Halifax

08/2018-12/2018 **Social Representative, Residence Life Student Council**

Dalhousie University, Halifax

Skills

Python, ASP.NET, Java, C, C++, Cobol, JavaScript, HTML5, VHDL

MySQL, Oracle, Postgres, Firebase

Eclipse, PyCharm, Google Colab, Microsoft Visual Studio, Notepad++, Atom, GitHub, Jira, Putty, Heroku, SVN

Linux (Fedora, Debian, and SUSE), MacOS

Web Technologies HTML/CSS, JavaScript

ASP.NET

References

Dr. Srinivas Sampalli (Master's Supervisor)

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