**Statement of Purpose**

With rapid digitalization taking place all over the world, various technologies integrated with Industrial Revolution 4.0 are appealing targets for attacks. Thus, vulnerabilities in every exploited technology need to be addressed constantly through scaling up security parameters and implementing proper solutions to protect data, processes, and systems. A never-ending challenge for specialists to defend against various forms of phishing which can account for huge losses be it personal or business, since the attackers evolve continually and adopt various measures to seek data constantly. Thus, it requires persistent work and *one-upmanship* over the cyber attackers to solve the complex cyber security challenges in all sectors viz. financial, medical, defense, and education. The thrill of challenging myself and contributing constructively to provide viable solutions to different security problems inspires me to apply for a Master’s in Cybersecurity program.

Under the umbrella of B.Tech. in Information Technology program, a variety of courses kindled and strengthened my interest in Information Security. While studying Human-Computer Interaction, I realized the need for consumers to be aware of various security features and their regular exercise when using a computer to deal with various threats such as phishing. During Computer Networks Lab, I performed various exercises like implementing small scaled networks between small clusters of systems and sharing files through them. I understood the importance of setting up a secure network and the crucial need for encryption and decryption of data to provide an additional layer of security. I learnt how data from the sensor in IoT devices are sent through the host system which monitors them, and how this information could be useful for intruders to know certain aspects of the environment. Through MOOCs like Usable Security, Software Security, and Cryptography I could delve deeper in different aspects of Cybersecurity. My exceptional academic record bespeaks my commitment and dedication as a student.

My projects *URL Based Phishing Website Detector* and *File Encryption and Decryption* were based on my strong interest in Information Security. For the first project, I used Social Engineering to identify the psychology of the people and design a deceptive message tempting users to click on; used gophish tool to create simulations of a phishing attack and understand the vulnerabilities; and employed Machine Learning techniques to create a prediction system with previously captured data. This project was published in IJSRP. For the latter project, I used Hashcat to cipher the texts and decipher them. I have worked along with a Research Scholar for the project *Tweet Analysis to Classify Negative Emotions Using Zero-Shot Classification* which has led me to develop my skills as a researcher.

My recent summer internship at Ford Motor Private Limited allowed me to understand about the importance of data security and integrity in the development of the products on a large scale. I contributed to the development of X-Carline Chart which helps in defining Prototype Builds for vehicles and its product development based on the global requirement. I also worked on a web application that was built on Springboot framework. I participated actively in Testing and Quality Assurance for every iteration, and performed both White box testing as well as interaction with stakeholders to understand their expectations and suggestions. I worked on the vulnerability of the web application on which data used had to be secured before transactions and be accessible to only certain authorized people. I learnt about the various development methodology especially agile methodology in software development. Most importantly, I realized how much effort in development is put upon the usability of a product by consumers and the security that it provides.

A competitive sportsperson who has played in and won various tennis tournaments, I have learnt the significance of discipline, compassion, strong character and a sense of belonging through sports. Being in various positions of leadership and volunteering for various causes since school days led me to discover different aspects of my personality, and enhance various skills like time management, and communication.

During my Master’s, I want to work primarily to address the high-concern issues of phishing and the prevention of data breaches with Identity and Access Management. I want to understand the use of Social Engineering in the context of phishing and ways these can be prevented from occurring, and carry out trenchant analysis of the modeling of a phishing attack to implement for detection and prevention. I want to explore the models to implement that fight phishing by using a usable security approach. After the Master’s, I want to work with organizations like Visa and PayPal where I can contribute to human-centric security solutions by solving the problems of intrusion, phishing, and data security where exploitation occurs often. In the times to come, I aim to start my own entrepreneurial venture that would provide robust information security systems.

Northeastern University has an apposite, industry-oriented curriculum for Cybersecurity as well as a co-op that provides an abundance of practical training The NU Hacks organization will help me to express my views as well as explore methodologies and tools used in the security domain. This will give me an opportunity not only to exchange ideas but also to build my network. Northeastern University’s strong connection with the industry will help me interact with great minds from around the world and allow me to work with them. Multiethnic, multilingual, and multiracial peers will enable me to understand different perspectives and broaden the horizon of my ken. All in all, this university is an ideal fit for my aspirations and aptitude. I hope the admission committee will give me a chance to prove my mettle as a part of its vibrant student body.