



PROFESSIONAL EXPERIENCE

SOFTWARE & INFORMATION SYSTEMS LAB, UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE, JANUARY 2017 TO DECEMBER 2017

RESEARCH ASSISTANT

- Retrieved Control Flow Graphs of the bytecode programs in the form of adjacency matrix and utilized an object detection algorithm to predict malicious behavior in Java applets.
- Engineered a Symbolic Interpreter in **Prolog** to identify crucial information from Java bytecode by modeling every instruction as a program state consisting of Class, Method, Local variables, Operand stack and Instruction handle.
- Designed and implemented vendor-specific phishing URL detection using classical machine learning.

COGNIZANT, PUNE, INDIA, SEPTEMBER 2015 TO JUNE 2016

PROGRAMMER ANALYST TRAINEE

- Created unified view of Data fetched from multiple sources using the **TIBCO** BusinessWorks Integration tool in the middleware of a member portal for a US-based healthcare client.
- Created **SOAP** web services to fetch data from multiple sources as per the specified requirements.
- Developed the back-end using **Servlets** and parts of the User Interface, while supervising a team of four as part of training to build a web application in **J2EE, JavaScript, MySQL, HTML/CSS and Materialize API**

EDUCATION

MASTER OF SCIENCE IN COMPUTER SCIENCE, 2017

The University of North Carolina at Charlotte

GPA: **3.8/4.0**

BACHELOR OF ENGINEERING IN COMPUTER ENGINEERING, 2015

University of Pune

GPA: **3.5/4.0**

TECHNICAL SKILLS

- Programming Languages: **Python, Java, C++, SQL, Prolog, HTML5/CSS3, JavaScript, PHP**
- Frameworks & OS: **Django, Flask, Bootstrap, Windows, Linux, Android, Apache Spark**
- Machine Learning & Cloud: **AWS, Azure, Hadoop, Docker, Classical Machine Learning, Heroku**
- Databases: **MySQL, SQLite, PostgreSQL, MongoDB**

OPEN SOURCE CONTRIBUTIONS

SOOT – A JAVA OPTIMIZATION FRAMEWORK, DECEMBER, 2016

- Soot is a leading language manipulation and **optimization framework** developed by Sable Research Group consisting of Intermediate languages for the Java programming language with over 800 stars and 340 forks.
- Extended the functionality of Soot by writing programs to **traverse** an **Interprocedural Control Flow Graph** of a Java program in Depth-first manner and saving it to **DOT** extension which enabled **visualization** of an entire graph.

PROJECTS

SOCIAL MEDIA SITE FOR OUTER SPACE ENTHUSIASTS, DECEMBER TO JANUARY 2017

- Developed and deployed (**Heroku**) a **scalable** mini social networking website in **Django** 1.11 and HTML5/CSS3 and **Bootstrap** for outer-space enthusiasts.
- Users can create groups (similar to subreddits) on various topics (SpaceX, NASA etc.).
- Users can then create posts in the groups and can also leave the group or join other groups

IMPLEMENTATION OF MACHINE LEARNING ALGORITHMS WITH NUMPY, AUGUST TO DECEMBER 2017

- Implemented **Principal Component Analysis** and **Linear Discriminant Analysis** for dimensionality reduction.
- Implemented Unsupervised algorithms, namely **K-means** and **Hierarchical** clustering.
- Implemented **Linear Regression, Logistic Regression** and **Neural Network**. All above achieve 98% accuracy.

CLASSIFICATION OF COMMON VULNERABILITIES & EXPOSURES, JANUARY TO MAY 2017

- Performed **Binary Classification** to train multiple classifiers to map a vulnerability ID (CVE) to its appropriate class.
- Directed extensive feature engineering by using tf-idf vectors and word-embeddings (word2vec) on a corpus of over 70k vulnerabilities.

FACEBOOK CHAT MONITOR (CHROME EXTENSION), OCTOBER TO DECEMBER 2016

- Conceptualized and developed a **browser plugin** in **JavaScript** for Google Chrome to read chats from a Facebook page and display alerts based on blacklisted keywords
- Configured the Facebook app and Cloud9 server in **PHP**; used **Graph API** to retrieve chat text from the Facebook page in the server.

TIC-TAC-TOE ARTIFICIAL INTELLIGENCE, OCTOBER TO DECEMBER 2016

- Developed a Tic-Tac-Toe game playing agent in **Java** using Minimax Algorithm with Alpha-Beta pruning supporting grid size up to 13 x 13