

Adnan Bashir

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Database Engineer / Programmer & Malware Analyst

Over 5 years of progressive experience in Python Development, RDBMS for Machine Learning and Statistical Data Analysis in Python. In addition, also have been working with Django which is a high-level Python Web Framework, SQL for importing/ exporting data for detailed statistical analysis, malware analysis, web-based malware analysis, behavioral and static analysis of malware. Also worked on social media censorship (Facebook and Twitter). Core competencies include:

**PYTHON DEVELOPMENT • PYTHON SCRIPTING • RDBMS • DATA ANALYSIS • MACHINE LEARNING • NEURAL NETWORKS
POSTGRES SQL • MYSQL • DJANGO • WEB-BASED MALWARE ANALYSIS • BEHAVIORAL MALWARE ANALYSIS • STATIC MALWARE
ANALYSIS SANDBOX TESTING OF MALWARE VULNERABILITY TESTING / DETECTION • EXPLOIT DETECTION • AUTOMATION OF
MALWARE DETECTION PROCESS • PACKET ANALYSIS ON WIRESHARK • QA TESTING TEST CASE ANALYSIS • CENSORSHIP STUDY**

WORK EXPERIENCE

DataBase and Machine Learning

University of New Mexico, USA

August 2014 - Present

Worked on 10+ projects over the past 4 years including semester projects for courses like machine learning and artificial intelligence where majority of work was on data analysis and management. Also used Python for different projects for Ph.D research that includes data collection and statistical analysis.

Major Projects :

- **Facebook Friendship graph analysis:** Collected the data from 30K Facebook users and populated the **DB** and designed a web interface backend by **SQL** to be used by different project members.
- **Music Classifier:** Designed and implemented a **Python based classifier** that predicts different genres of music.
- **Naive Bayes Classifier:** Design a classifier based on Python to distinguish different words and tell to which newsgroup they belong (i-e predicting the chances that the word election will belong to the newsgroup "Politics"). Implemented the code in python which allows the use of Python based packages like **numpy, scipy, sklearn and matplotlib**.
- **Iceberg classification problem:** Used latest machine learning techniques in Python coupled with data analysis (Images data) to classify between an image of iceberg and ship. This project will be used for classifying and mapping iceberg data in the oceans all around the world. Used **PCA with classifiers** based on **sci-kit learn** (Python library) for this project.

Research Assistant

University of New Mexico, USA

December 2016 - December 2017

Worked with Dr. Jedidiah Crandall and Daniel Riofrio (Senior OTF Fellow). This project encapsulates the censorship study in Ecuador during 2017 Presidential Elections. My responsibilities were to crawl the Twitter feed along with all other information like followers, tweets etc. on regular basis and see how it changes during pre-election, election and post-election era. I worked on implementing some algorithms that helped us measure any possible censorship in Ecuador during that period on Twitter. Also detected bots on Twitter that might be motivated for gaining popularity on Twitter and reach out to more audience.

Project Assistant

University of New Mexico, USA

August 2015 – November 2016

Worked with **Dr. Michalis Faloutsos** and **Dr. Jedidiah Crandall**. Responsibilities were to analyze the Facebook friendship graph. That mainly included the declared friendship graph analysis along with its comparison with inferred friendship graph.

Research Assistant

University of New Mexico, USA

May 2014 - May 2015

Worked with **Dr. Michalis Faloutsos**. Did the following tasks :

- Built a classifier to distinguish between Born-Malicious and Compromised website. The accuracy of that classifier was 94%.
- Studied in detail how web-based malware propagates.
- Studied the difference between legitimate and malicious websites.
- Research on social network security, this includes studying different ways to make the social network secure.

Malware Analyst

Ebryx Pvt. Ltd. Pakistan

August 2012 - December 2013

Was responsible for QA of **Fireeye's** security products (Fireeye is a leading company in information security based in USA)

. In addition to that following were also part of the job :

- Research on malware that were not detected by our systems.
- Behavioural and Static/code analysis of malware
- Vulnerability testing and exploit detection.
- Automation of malware detection process using Python, Shell Programming and VBscript
- Packet Analysis in Wireshark.

PUBLICATIONS

“Infect-me-not”: A user-centric and site-centric study of web-based malware

Authors : Huy Hang, Adnan Bashir, Michalis Faloutsos, Christos Faloutsos and Tudor Dumitras

Conference : IFIP Networking 2016, Vienna, Austria

Spectrum-aware dynamic channel assignment in cognitive radio networks

Authors : Y Saleem, A Bashir, E Ahmed, J Qadir, A Baig

Conference : Emerging Technologies (ICET), 2012 International Conference

EDUCATION:

University of New Mexico, USA (2016 - Present)

Ph.D Computer Science

University of New Mexico, USA (2014 - 2015)

Masters in Computer Science

National University of Science & Technology, Pakistan (2008 - 2012)

Bachelors in Electronics Engg.