Anam Fatima

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Academics

Qualification	Year of Passing	University /Board	College	Marks (%/CGPA)
M.Tech (Computer Science & Engineering)	2019	Dr. A.P.J. Abdul Kalam Technical University, Lucknow	Centre For Advanced Studies, Dr. A.P.J. Abdul Kalam Technical University, New Campus, Lucknow.	9.58/10 *Gold Medalist*
B.Tech (Computer Science & Engineering)	2013	Dr. A.P.J. Abdul Kalam Technical University, Lucknow (Formerly-UPTU)	Institute of Engineering & Technology (I.E.T.), Lucknow.	78.72% First Division with Honours
12th	2009	ISC	La Martiniere Girls' College, Lucknow	92.5%
10th	2007	ICSE	La Martiniere Girls' College, Lucknow	88.6%

Awards and Achievements

Achievements	Received Date
M.Tech Gold Medalist (Best M.Tech Project Award)	2019
GATE Qualified/ NET Qualified	2015, 2016, 2017, 2018/ 2020
Service & Commitment Award (Tata Consultancy Services)	2020, 2016
Special Initiative Award (Tata Consultancy Services)	Sept, 2013
ILP Kudos (Tata Consultancy Services)	Oct, 2013
Internship Certificate at IIT, Kanpur	May, 2018
Cyber-Sec Workshop and Quiz 2nd Prize Certificate	March, 2018
Machine Learning Workshop Certificate	November, 2018

Work Experience

- Overall Industrial and Research Work Experience of 7+ years. Worked at Tata Consultancy Services (TCS) from July 2013 till September 2020 (Designation-IT Analyst).
- Worked as Senior Developer and Team Lead, facilitating cutting-edge engineering solutions for live projects, critical client deliveries, internal projects and research-oriented work.
- Hands on industrial experience in Java/J2EE, Spring 3+ MVC Framework, REST APIs with Java (JAX-RS), Struts, Hibernate, MEAN stack framework, etc.
- Research work Android Malware Analysis using Machine Learning as part of M.Tech Thesis on "*Android Malware Analysis and Family Classification Using Machine Learning: Lightweight and Accurate Host-Server based Approach*", implemented using Python libraries for reverse engineering Android APKs and applying Machine Learning for detection and classification of Android Malware.
- Research oriented work in TCS CoE (Center of Excellence) core team in *Applied Deep Learning, Machine Learning and Natural Language Processing* for AI solutions in *DevOps* domain from model building training to deployment.
- Android App Development in Android Studio and Machine Learning using Java Weka Library for *Android Malicious App Detector* at IIT-Kanpur internship program.
- Strong problem solving and analytical skills, interpersonal abilities with effective technical and non-technical communication.

Technical Skills/Specialization

Research Work/ Specialization	Malware Analysis using Machine Learning, Applied Machine Learning, Deep Learning and Natural Language Processing (Python)
Technology	Java/J2EE, Python, Android, SQL
Web Technology	Html, JavaScript, CSS, JQuery, Ajax
Web Server	Apache Tomcat, JBoss
Database	MySQL
Tools	Anaconda platform, Eclipse IDE, Android Studio, PyCharm, PMD tool, Postman, Firebug, SVN
Operating System	Windows family, Linux (Ubuntu)

Publications/Conferences

- **Android Malware Detection Using Genetic Algorithm based Optimized Feature Selection and Machine Learning** at 2019 42nd International Conference on Telecommunications and Signal Processing, Budapest, Hungary, 2019, IEEE Xplore Digital Library, pp. 220-223, doi: 10.1109/TSP.2019.8769039.

- **Host-Server based Malware Detection System for Android Platforms Using Machine Learning** at 5th International Conference on Computational Intelligence and Communication Technology (CICT-2019), India. Paper presented and published as part of Springer Book Series on "Advances in Intelligent Systems and Computing" vol 1086. Springer, Singapore. doi: https://doi.org/10.1007/978-981-15-1275-9_17.

- **Bitcoin Cryptocurrency: A Review**, Anam Fatima and Dr. Vijay Kumar Tiwari, American Research Journal of Computer Science and Information Technology, ISSN: 2572-2921, Volume 3, Issue 1, pp: 1-8.

- **Machine Learning Based Approach for Malware Identification and Familial Classification**, communicated to Computers & Security Journal, Elsevier.

Projects Summary

Android Malware Analysis Using Machine Learning:
- Worked on reverse-engineering Android APKs and applying Machine Learning on dataset using Python libraries for it.
- This work was in extension to Android Malicious App Detector work where server-side detection accuracy of malicious applications was improved using Python libraries for feature selection and parameter-tuning the model.
- Paper on the same was accepted and presented at 5th International Conference on Computational Intelligence and Communication Technology (CICT-2019). Second paper accepted at 2019 42nd International Conference on Telecommunications and Signal Processing (TSP) at be held during July 1-3, 2019, in Budapest, Hungary.

Android Malicious Apps Detector
- Worked during Summer Internship at IIT, Kanpur in May 2018 using Android Studio for client-side development and making use of Machine Learning at server-side for malware detection.
- Developed an App which will help in characterization and detection of malicious Apps installed on the device by extracting static features such as permissions used and other application components.
- At server-end used Machine Learning to train a classifier to detect the App as malicious or not implemented in Java/J2EE. User is given option to uninstall the App if detected as malicious.

SyncManager Application
- Worked on successful development and deployment of Client project during tenure at TCS.
- The project provided scheduling of services for synching of defects from testing tool to another for synching updates on defects by development and testing teams.
- It was developed using Java Spring framework for defects synching. It used REST web-services provided by the two tools for getting and posting defects.

Examination Management Project for Haryana Board of School Education
- Worked on successful delivery of Client project during tenure at TCS.
- The project completely automated process of Boards Examination right from student registration, examination management to result processing/display.
- It was implemented using Core Java, integrating to a project-specific framework implemented in Struts.

Miscellaneous BizApps
- Work on various BizApps (small business applications) during tenure at TCS.
- **E-Agreement**: Complete automation of tedious process of signing agreements between TCS and clients
- **Infrastructure Resource Management**: Project for management of Local Infrastructure Service Providers used as exam centres by Assessment team.
- **Invigilator Management System**: Project for management of exam centre invigilators.
- **Examination management** for other universities/institutes and other smaller use-cases. Developed in Core Java, integrating to a project-specific framework implemented in Struts.

LAN based Communication System
- Developed a LAN based communication system with some basic security features making use of socket programming and cryptography for effective communication via text/voice chat, secure file transfer, etc.
- Developed in Core Java making use of Java libraries for socket programming and encryption/decryption.

Other Activities

Attended inter-college workshop: CyberSec held in March 2018 at college and participated in Quiz on final day and won 2nd prize in it. Won prizes in Web Designing, T-Shirt Painting, Collage Making events at college and held responsibility of Assistant Coordinator of Fine Arts and compering for Extempore event held at Annual Inter-College Cultural and Technical fest of I.E.T., Lucknow (ENCORE).