

Gayathri Rajakumar

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Education

Georgia Institute of Technology - Atlanta, GA

Master of Science in Cybersecurity, School of Cybersecurity and Privacy

August 2021 - May 2023

Coursework - Network Security, Information Security, Computer Networks

College of Engineering Guindy - Chennai, India

Major: Computer Science and Engineering GPA: 9.39/10

August 2016 - May 2020

Coursework - Security in Computing (Cryptography, Web security, Software security), Operating Systems, Database

Work Experience

Citicorp Services India Private Limited - Chennai, India

Application Developer

August 2020 - August 2021

- Created a tool to send notifications between systems using Kafka
- Automated daily and weekend checkouts that saved developer time
- Collaborated with 3 people to create an abstraction layer using ELK stack for future requests

Summer Technology Analyst

May 2019 - July 2019

- Created a full stack web-based recon tool to check and update the asset class records
- Presented the project to Chennai Site Heads that lead to a full-time position

Publications

A Machine Learning Framework for Domain Generating

September 2020

Algorithm based Malware Detection

Wiley Security and Privacy

<https://doi.org/10.1002/spy2.127>

- Created a machine learning framework for real-time detection of DGA generated domain names
- *Models Used:* SVM, J48, Logistic regression, Gradient Boosting Tree, DBSCAN, OPTICS

Projects

Establishing Trusted Communication Channels in Vehicular

October 2021 - Present

Ad-hoc Networks (VANETs)

- Create a Key exchange mechanism that ensures confidentiality and authenticity
- Manage the overhead while adding security mechanisms

Simulation of BGP Hijacking

October 2021

- Simulated a BGP Hijacking attack using Mininet

Buffer Overflow attack

August 2021

- Simulated a stack buffer overflow attack
- Simulated a return-to-libc overflow attack

Location based Advertisement Delivery using Vehicular

October 2019 - August 2020

Ad-hoc Networks (VANETs)

- Simulated a VANET using NS2 that is capable of delivering the advertisements to users
- Used location to deliver advertisement from vendors that are closer
- Incorporated user preference using machine learning algorithm

Intelligent Traffic Management System

March 2019 - October 2019

- Developed a web application that gathers live traffic data from Twitter feed
- Suggested the shortest route based on the distance, time taken and traffic delays

Semantic Segmentation of Cooking Videos

August 2018 - September 2018

- Used Differential Evolution to extract key frames from a video
- Created a dataset and a model for identification of Indian ingredients
- Output is a video made from the extracted key frames

Skills

Programming Languages: C, C++, JAVA, Python, Javascript

Exploits: Buffer overflow, XSS, CSRF, SQL Injection

Tools: GDB, Burp suite, Metasploit, Nmap, Wireshark, Nessus

Frameworks: SpringBoot, ExpressJS, Flask

Database: MySQL, Oracle

Operating Systems: Linux, Windows

Technical Skills: Information Security, Network Security, Cryptography, Networks, Access Controls

Leadership / Activities

Computer Science and Engineers Association (CSEA)

July 2019 - March 2020

Vice-Chairperson

- Coordinated the events and activities for the students of Computer Science department
- Planned and conducted internship and placement preparation classes for juniors
- Organized a state-level technical symposium and raised \$3600 via sponsors

Sarojini Naidu House

June 2014 - March 2015

Vice-Captain

- Created and managed teams at all levels for school-level sports competition and sports day parades

Awards / Achievements

Deadlock, Abacus

March 2019

First prize

Deadlock is a database based event where the participants are asked to write SQL queries to find the key.

CodeHer, Kurukshetra

February 2019

Honorary mention

CodeHer is a hackathon for women. Developed an application that translates text from captured pictures

Code For Queens, Sync

September 2018

First prize

Code For Queens is a women-only competitive programming and puzzle solving contest

Secondary School Leaving Certificate (SSLC)

May 2014

Third Rank

Secured third rank in the final exams of SSLC in the state level

Volunteer Work

National Service Scheme

August 2016 - July 2017

- Took part in a 10-day camp in Redhills, India, cleaned a lake in the village and tutored students
- Participated in the college campus cleaning initiative