Farnaz Towhidi . Jarvis Consulting

I am Farnaz, a technical consultant at Jarvis Consulting Group. I completed my master's and PhD in computer science at UTM University. My research demonstrated the vulnerability of graphical password authentication to dictionary attacks by aggregation of regions within an image that exhibit low-level properties in conjunction with their neighboring regions. The result of attacking with this dictionary revealed that hot-spot are the main security flaws in graphical passwords. The findings of my research have been elegantly captured in two book available on Amazon."

Skills

Proficient: JavaScript, Java, React, Angular, Linux bash scripting, Node.js, MongoDB, SQL

Competent: REST APIs, Docker, Git, Html/CSS, Agile/Scrum

Familiar: OAuth, TestRail, Selenium, Jira, .Net

Jarvis Projects

Project source code: https://github.com/Jarvis-Consulting-Group/jarvis_data_eng-FarnazTowhidi

Twitter CRUD App [GitHub]: I have developed an MVC application that allows users to create and delete tweets on Twitter using the Twitter REST API v2. The application follows a layered architecture with four components; Model, Controller, Service, and Data Access. The Controller layer handles client input and calls the service layer to handle the business logic. The service layer interacts with the Data Access Object for communication with the Twitter REST API. This enables actions such as posting, showing, and deleting tweets. To ensure the quality of the code, integration and unit testing are performed using the Mockito and JUnit4 libraries. To authenticate with the Twitter API, the application utilizes the OAuth 1.0a protocol, which includes the necessary credentials in the HTTP Authorization header. For easy distribution and deployment, the project is packaged into a Docker image and published on Docker Hub. In addition, the spring boot framework is used to manage dependencies.

Cluster Monitor [GitHub]: This project is used by the Jarvis Linux Cluster Administrator (LCA) team to manage server nodes in a closed network. The bash script collected the hardware specs of each server like host name, CPU architecture, CPU model, and L2 cache as well as real time resource usage of each server like CPU idle, kernel statistics and available disk space. The PostgreSQL Docker container configured and maintained to store and manage the collected data.To ensure accurate and up-to-date information, resource usage is fetched at regular intervals using Crontab.

Grep App [GitHub]: This project simulatered the egrep text processing tool, enabling recursive searches of a given directory using regular expressions. The BufferedReader class is used to read the file, and regular expressions are applied to compare words against the provided regex pattern. The identified words are saved to an output file using the FileWriter class. Additionally, the project was re-implemented using Lambda and Stream APIs to write code in a more readable functional programming style. Maven is utilized for dependency management, specifically for incorporating slf4j and log4j for logging purposes.

JDBC Apps [GitHub]: Developed proficiency in data access patterns and JDBC by performing data manipulation tasks on the hplussport PostgreSQL database. Utilized Dbeaver and Intellij Idea for database management, Docker for containerization, PostgreSQL and PSQL CLI tool for database creation and manipulation, JDBC for data access, and Maven for build automation.

Highlighted Projects

Chatterbox [GitHub]: I have developed "Chatterbox," an instant messaging application with a Client-Server architecture that enables real-time communication between users. In this single-page application, the client-side scripting is implemented using React and Material-UI (MUI), providing a seamless and intuitive user interface. To handle data storage and manipulation, CRUD requests are sent to the server through API calls using Express.js and MongoDB. The application leverages Socket.io to achieve the functionality of instant messaging, enabling users to engage in real-time conversations. Additionally, the aws-sdk package is utilized to facilitate the smooth uploading of images to Amazon Web Service (AWS) S3 buckets. This allows users to easily share and display images within the application. Lastly, the project is deployed to Heroku, ensuring that Chatterbox is accessible and available to users on a reliable hosting platform.

Track Fit [GitHub]: Track Fit is a Python-based Django Web Framework designed for individuals to track their fitness journey. With Django's built-in authentication, users can securely authenticate and manage their daily exercises in a

PostgreSQL database. The framework also provides yearly reports grouped by month for insightful analysis. Deployment is seamless through Heroku, ensuring easy accessibility and availability for users.

War Card Game [GitHub]: Solo, 1 week project for the browser base game, using application state, manipulating DOM and includes shuffling and win/loss logic. Technologies used, HTML, CSS and JavaScript.

Professional Experiences

Technical Consultant, Jarvis (2023-present): Developed multiple software applications and worked on projects using Java, SQL, Linux Bash, Docker and more. Agile/Scrum was used to collaborate with team and produce minimum viable products. Git was utilized for version control on projects.

Quality Assurance, IBM ,Fredericton (2020-2020): Part of security intelligence team of 10 working on QRadar that ensured the testing algorithms and probability threat analysis was maintained at peak efficiency

Full Stack Developer, Canadian Institute of Cybersecurity, Fredericton (2019-2019): Designed and built website for International Conference on Privacy, Security and Trust,including information on events, workshops, organizers.

Full Stack Developer, Biossentials, Kuala Lumpur (2009-2014): Worked closely with a designer to create and deploy a new comprehensive layout that allowed the customers to easily connect with vital information. Improved the quality of company search engine optimization performance. Overhauled the entire structure of the website, create keywords contents, change the naming of files and folder, recommended weekly content, deleting flash and other technologies to gain it

Education

General Assembly (2022-2022), Software Engineering Immersive, Faculty of Computing - GPA: 3.9/4.0

Universiti Teknologi Malaysia (2010-2015), PHD of Computer Science, Faculty of Computing - This thesis creates a new method for dictionary of cued recall based graphical password by combination of top down and bottom visual attention. This approach leads to powerful automated dictionary attack that can guess up to 70% of some passwords.

Universiti Teknologi Malaysia (2008-2010), Master of Computer Science (Information Security), Faculty of Computing - GPA: 3.65/4.0 - This thesis is an Enhancement on Passface Graphical Password Authentication.

Miscellaneous

- Published on Amazon: Graphical User Authentication (GUA): Graphical Password Algorithms and Analysis
- Published on Amazon: Graphical Password An Alternative to Textual Password
- Computer Hacking Forensics Investigator (CHFI), EC-Council
- Certified Ethical Hacker (CEH), EC-Council
- Cloud Core, IBM
- Design and User Experience (D&UX), IBM