

Karim Kabbara

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EDUCATION & CERTIFICATIONS

University of Colorado Denver. GPA: 3.52/4.00

Bachelor of Science in Computer Science with a Certification in Cybersecurity and Secure Computing.

NVIDIA DLI Certification: Building Intelligent Recommender Systems

Denver, CO

In Progress: May 2023

November 2023

PROJECTS

Crossfire Attack

December 2021

- Wrote TCL code to simulate legitimate users, compromised machines (BOTS), decoy servers, routers, and a target webserver. The goal of this attack is to identify the links that user packets travel on and to flood them to deny access to the web server.
- To achieve a Denial of Service, BOTS were directed to send many packets to decoy servers. These decoy servers were along the same path that the users needed to reach the target webserver. The degradation ratio is a percentage of the total number of dropped user packets over a time interval. To achieve the highest degradation ratio possible, each bot needed to send a specific amount of traffic so that the intermediary links were not flooded.
- The code was written so that each link can handle 950Kb of data. The intermediary links could not exceed that amount. However, when the packets aggregated on the target links, the data needed to exceed 950Kb to cause that link to flood.

Port Scanner Detector

July 2022

- Wrote a bash script that scans for live machines on a network and retrieves all their open ports. Detected machines are logged in a report file along with any open ports.
- Wrote a python script that analyzes network traffic and detects any port scanners. A listening socket was used to capture packets traveling through the network. Packet headers were dissected to extract source & destination mac addresses and IP addresses.
- Unique source and destination IPs, and ports were stored in a first contact table. The first contact table is analyzed to calculate fanout rates. Source ports that exceeded a threshold of over a time interval were flagged as port scanners.

Tournament Management System

October 2022

- Created a soccer tournament management system using Java and JavaFX. The system allows administrators to add countries, teams, and players, create matches and add lineups for a soccer tournament.
- General users can view all the lineups, matches, and teams in the tournament in a separate JavaFX application.
- The tournament system is hosted on a multi-threaded server that allows administrator applications or general user applications to connect to it. The application identifies itself to the server so that the server controls access to functions.
- To prevent race conditions, concurrency is taken into consideration in this system by synchronizing all data modification.

Brady Public Humanities Archive (<http://44.229.176.110>)

November 2022

- As part of the Senior Design project, our team created a website that functions as an archive for Spanish humanities projects. Our client, a Spanish professor at The University of Minnesota, requested a way for professors and users to submit humanities projects to a digital archive and view other projects on an interactive map.
- Technologies used include AWS LightSail to host the server, Nginx paired with Unicorn to run the web server and Django for the development framework. Amazon's RDS is used to host the MySQL database.
- The main attraction is a map that shows where projects occurred using markers. The markers can be clicked to visit a project or filtered using the filter section below the map. The search bar also allows users to find projects using keywords. Users may create accounts and submit projects to the archive.

PROFESSIONAL EXPERIENCE

Target

Parker, CO

Fulfillment Expert

October 2020 – Present

- Responsible for finding and picking products around the store in a timely fashion. Products are bagged and stored efficiently to allow other team members to quickly deliver the products to the guest.
- Packaged merchandise and worked with UPS and FedEx to ensure products were safely shipped out and delivered on time.

Best Buy

Parker, CO

Sales Expert

February 2019 – August 2020

- Provided in-depth solutions and recommendations by asking clients open-ended questions to understand their needs. Solutions mainly involved computers, tablets, home theater setups, and associated peripherals. (Soundbars, printers, etc.)
- Assisted clients with products they already own by troubleshooting the cause of the problem and finding a solution.

Walmart

Parker, CO

Electronics Associate

August 2017 – January 2019

- Responsible for stocking products on the sales floor to provide a high standard of presentation and maintaining a clean salesfloor by performing cleaning routines. Tendered transactions for electronic products.
- Ensured that returned products were legitimate by checking serial numbers and other product information.

SKILLS & LANGUAGES

Skills: Python, C++, Java, JavaFX, Bash, MySQL, Kali Linux & Ubuntu, Wireshark, Git, Object-Oriented Programming, Multi-Threaded Socket Programming, AWS, Django, HTML, CSS, JavaScript, Embedded Systems (Arduino).

Languages: English (Fluent), Arabic (Native), French (Beginner).