Yasin Hassan

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**Work Experience­**

**Data Analyst Internship** at Risk Assessment Network + Exchange (RANE), Corp May 2021 – August 2021 Washington, D.C.

**Analyze user behavior from log data**

* Aggregated user data for usage analytics on multiple websites.
  + Wrote a single **Python** file using boto3 that would create **Simple Storage Service (S3) objects** (multiple folder names with json file name), upload filtered **Amazon Web Services** (AWS) **CloudWatch** log data to those objects, and then insert those objects to an AWS **S3 bucket**
  + Object names followed a date format, bucket-name/year/month/day/hour-minute.json. New objects created will not overwrite or replace any previous objects or folders. Log data starts collecting 7 days before the run date of my program. Python program filters and collects logs for every half-hour interval. If the process takes more than a minute, whatever data isn’t added in the first JSON file goes to the next JSON file.
  + Used **SQL in AWS Athena** to query the JSON files.
    - Split columns with Python dictionaries into smaller columns.
* Used **Git** methods such as git commit, git branch, and git push to create my own branch to log my work with separate messages, and to push my work to my RANE’s group in Bitbucket for my colleagues and supervisors to use.
* Uploaded a **JSON** log file to the S3 bucket, then created a table in AWS **Athena.** Used **SQL** to extract the data from the table.
* Accessed AWS **CloudWatch** logs through the AWS access keys and **boto3** in Python.
* Used Python dictionary manipulation for dictionaries in a **JSON** file, which contained user IDs, URLs, date, time spent on website. Displayed features such as
  + Unique URLs visited by each user.
  + Unique URLs visited by each user where user ID is inputted.
  + Unique URLs visited on a certain date for each user.
  + Average load time for each unique URL.
  + Tested out all the methods with **test driven development** in **Python**. Found a way to test nested unordered dictionaries with unordered lists by converting each list in each dictionary to a set.
* Created a dashboard with dictionary manipulation **visualization** **graphs** with **AWS** **QuickSight.**

**Blockchain Internship at Technuf, LLC** July 2020 – present

Rockville, MD

* Modified blockchain code written in **Python** 2.x to Python 3.7 functionality.
* Delivered researched information on Blockchain technology to company leadership.
* Downloaded an Opensource example of Python & **Flask** code from GitHub handling all aspects of a blockchain, starting from UI to Nonce**.** Also installed all the appropriate Python and Flask libraries to make the code operational.
* Gained working knowledge of AWS for launching two **Ubuntu** based virtual machine nodes to facilitate the deployment of a Multichain Opensource blockchain operating amongst the two nodes.
* Gained working knowledge of **Unified Modelling Language** (UML) through Eclipse.
* Created a user interface HTML webpage using bootstrapping, different types of inputs, such as file inputs and date inputs.

**Student Grader at George Mason University** August 2020 - December 2020

Fairfax, VA

* Graded Calculus 2 Quizzes for math students.

**Other Relevant Experience**

* Created many Operational Research/Numerical Analysis Projects in **MATLAB**, some of which can be found at [**http://mason.gmu.edu/~yhassan3**](http://mason.gmu.edu/~yhassan3). These include:
  + Newton’s Method model to solve nonlinear systems.
  + Condition and Nonlinear Least-Squares Model.
  + Modeling and Maximum Likelihood Estimation of COVID-19, which includes labels. such as susceptible, exposed, infected, recovered.
  + A Spatiotemporal Dynamics Model of COVID-19 with the same labels.
  + Dynamic model of COVID-19, which adds the new labels named cases and deaths.
* Implemented a taxation project with **Python** mimicking tax bracket formula of **IRS.**
* Created a replica of Conway’s game of life and a cipher product using **Python’s** Classes and Objects.
* Taken a course in Udemy about full-stack development. Used Programs such as PHP, jQuery, Ruby, NodeJS, and AngularJS
* Implemented Android based Tic-Tac-Toe app using Java.

**Nanodegrees (Certificates) from** [**UDACITY**](http://www.udacity.com)

* Data Analysis and Visualization with Power BI Completed: November 2021
  + Created a Data Model for a Company Project
    - Imported Data of multiple types (Excel, Word, PDF, Text) into Power BI. Compiled a folder of multiple Excel Files into one table. Joined two tables that both share one column that is the same size.
    - Created a Date Table with Year, Month, Date, and Fiscal Year, Quarter, and Period
    - Built a data model that connects one central table with four other tables if each of those four tables has a similar column to the one table, but with different column sizes. E.g. Both tables have a date column but the date column in the central table is larger.
    - Calculated and found Sales (USD and CAD), Cost, Gross Profit, Gross Profit Margin, Gross Profit by Product, and Unit Sales by Product.
    - Created a Report that gives the sales and gross profit margin for each customer and customer type as well as the total values for both fields. Created another report for the Unites Sales and Gross Profit for each product including the total values for both fields.
  + Created A Detailed Data Report with
    - Used Cards, Bar charts, Bubble Maps, Donut charts, Line Charts, Scatter Plots and tables
    - Used different types of filters such as silders, hierarchy filters, drop-down filters, and filters with Select all and a search box
    - Created bookmarks that are pages with certain filters selected
    - Created buttons that accesses these filters and changes pages as well.
    - Created a drill-through page that gives detailed information on a particular field, such as dogs, when you click on it.
  + Created a Report for products, average incomes, locations, etc.
    - Created histograms for customers in expected income ranges.
    - Split one column with uneven spaces into six columns and unpivoted other columns as well.
    - Created scatterplots with the correlation coefficient, linear regression formula, and the trendline.
    - Crosslinked the histogram, heat map, and scatterplot together.
    - Created a stacked bar graph with each color in each bar representing a different income range, for example, $30000 - $40000 income range represents a bar in the graph.
* Programming for Data Science with R Completed: June 2021
  + *Bike Rental Business*: Designed a project in **R** where we would find data about bike rental trips, such as the most common month for bike rentals, the most common stations for bike rentals, and the total travel time for bike users.
    - Found the most common month by creating a function to find the mode of the months, extracted the month from the date. Used aggregation to rank the most common months for travel time, and then used the function I created. Looped this process for multiple data frames. Created a bar plot to graph the results.
    - Summed up the total travel time for multiple data frames while removing NA (Not Applicable) values. Used a bar plot with medians and quartiles to graph the results.
* Programming for Data Science with Python Completed: March 2021
  + Designed an SQL project which queries rental movies using the basic commands, advanced JOIN statements, data aggregation, sub-queries, and window functions. The queries include listing the number of times a movie has been rented out, providing a quartile number for each movie based on the rental duration length in each film category, displaying the corresponding count of movies within each combination of film category for each quartile, as well as the number of rental orders each store has fulfilled for the month.
  + Designed a **Python** program using Pandas data frame methods to study bike rental data in Washington, Chicago, and New York City. Users input the city, month and day of week and the program returns the most frequent times of travel, the most popular bike stations for the beginning and the end of the trip, and the total and average trip duration for those inputs.
  + Uploaded projects to GitHub using Git remote and local repositories, separate git branches, and git commit messages.
* AI Product Manager Nanodegree Completed: December 2020
  + Created AI models with **Google Cloud’s AutoML** software using hundreds of images of patient’s lungs. Labels for these images were with/without pneumonia. Used different cases to see how it would affect the precision, recall, and confusion matrix.
  + Programmed a questionnaire with instructions in Appen using **CML** for a person to determine whether a person has pneumonia or not depending on the image.

**Education**

**George Mason University** Graduation: May 2020

Fairfax, VA

* *B.S. Applied Mathematics (****Cum Laude)***

***Overall GPA: 3.63***

***Citizenship: A U.S. born citizen***

**College Coursework**

Calculus I, I & III Advanced Calculus *Intro to Business*

Differential Equations Advanced Linear Algebra *Global Business*

Linear Algebra Numerical Analysis I & II *Interpersonal Communication I*

Cryptography Modern Applied Math I & II *Interpersonal Communication @ workplace*

Probability History of Math *Relational Communication*

**Python** programing Language*Elec. Engr. Circuit I Mass Communication*

*Mechanical Engineering 101 Developing Professional Skills Organizational Communication*

*Intro to Elec. Engr. Intro to Gaming* ***Java*** *programing Language (in H.S.)*

**Skills**

* Proficient knowledge of **Python** and **Java.**
* Basic knowledge of **SQL** based programming
* Introductory knowledge in **R** based programming.
* Working knowledge of **Machine Learning** programs such as **Google AutoML** and **MATLAB.**
* Basic knowledge of **HTML** web development.
* Proficient knowledge in **CML** web development
* Experienced with **Git** software and programming.
* Proficient in Microsoft Office Suite (Word, **Excel**, PowerPoint, and Publisher).
  + Used Excel in a personal budgeting assignment that would account for Federal, State, Social Security, and Medicare taxes, housing and utilities, food, entertainment and personal expenses, transportation, and credit cards and loans.
  + Performed operations on Excel to find the standard deviation, average, median, percent error, uncertainty, and other statistical values.