**Yasin Hassan**

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**Education**

**George Mason University** Graduation: May 2020

Fairfax, VA

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

***Overall GPA: 3.63***

**Relevant Coursework and Certifications**

**Coursework**

Calculus I, I & III Advanced Calculus Elec. Engr. Circuit I

Intro to Elec. Engr. Advanced Linear Algebra Intro to Gaming

**Python** programing Language Numerical Analysis I & II Interpersonal Communication @ workplace

Cryptography Modern Applied Math I & II **Java** programing language

**Certifications** (Nanodegrees from Udacity): [Data Analysis and Visualization with Power BI,](#Power_BI) [Programming for Data Science with R](#R), [Programming for Data Science with Python](#Python_Udacity), [AI Product Manager](#Google_AutoML)

**Relevant Skills and Projects**

**Programming and Coding:** Experience in HTML5, JavaScript, Google AutoML, CML, Python, SQL, Git, MATLAB, and R.

* [HTML5](#html5): Created a user interface webpage using bootstrapping to track user information.
* [JavaScript](#Blockchain): Created Blocks in a Blockchain and an Android-based gaming app.
* [Google AutoML](#AI): Created AI models for image classification as a diagnostic tool for pneumonia in the AI Product Manager Udacity Course.
* [CML](#AI): Programmed a questionnaire with instructions in Appen for use with the AI model created with Google AutoML.
* [Python](#RANE_Python): Analyzed user data for usage analytics with a single file using boto3, AWS CloudWatch, S3 buckets, and Athena.
* [SQL](#Python_Udacity): Created a query to rental movie data using the basic commands, advanced JOIN statements, data aggregation, sub-queries, and window functions.
* [PHP and Ruby](#Php): Took a course in full-stack development course in Udemy using these programs.
* [Git](#Git): Uploaded Python projects to GitHub using remote and local repositories, separate git branches, and git commit messages.
* [MATLAB](#MATLAB): Created Operational Research/Numerical Analysis Projects using, Newton’s Method, Condition and Nonlinear Least-Squares Model, and Modeling and Maximum Likelihood Estimation.
* [R](#R): Designed a project that reads csv files, finds the mode, aggregates datetime data, and creates bar charts and box plots.

**Electronics:** Knowledge of principles of electricity through coursework and development of hands-on projects building circuits using AC/DC signals, diodes, LEDS, resistors, transistors, solar panels, etc.

**Technical Writing:** Experience in writing and editing technical writing reports through coursework, such as lab reports and an analysis paper.

**Research, Development and Review:** Researched, developed, and conducted research and prepared PowerPoint presentations on Blockchain Technology for company supervisors and colleagues.

**Working with Students:** Worked as a Student Grader at George Mason University, tutored math prior to college.

**Online Tutorials:** Extensive experience as a user of online learning tutorials on Udemy and Udacity.

**Microsoft** **Excel**: Performed operations on Excel to find the standard deviation, average, median, percent error, uncertainty, and other statistical values.

**Work Experience­**

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

**Analyzed 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.
* Created a requirements.txt file for colleagues that contains required programs to download. When file is used in command line, all the programs from this file will automatically download.
* Used **Git** methods such as git commit, git branch, and git push.
* 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.
* Created a JavaScript file that would create the genesis block, add new blocks, replace the blockchain and tests the validity of the chain.
* 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 Elastic Compute Cloud (EC2)** 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 **HTML5** webpage using bootstrapping, that contains search boxes that save previous results, file input buttons, drop down menus, and a submit button that takes you to another page

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

Fairfax, VA

* Graded Calculus 2 Quizzes for math students.

**Other Experience­**

* Created 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.

**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 multiple data types (Excel, Word, PDF, Text) into Power BI. Compiled a folder of multiple Excel Files into one table. Joined two tables that share a column of 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 sliders, 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 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 in which queries rental movies using the basic commands, advanced JOIN statements, data aggregation, sub-queries, quartiles, count, and window functions.
  + Designed a **Python** program using Pandas data frame and Numpy.
  + Used version control (**Git**) when working with other JavaScript and CSS files.