Hammad Hassan

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EDUCATION

Boston College, Morrisey College of Arts and Sciences   ChesnutHill, MA
Bachelor of Science | Computer Science   Expected Graduation: May 2024
Minor | Finance

Proficient in Python, Java, JavaScript, PL/SQL, R, ReactJS, NodeJS, Django, .NET, RPA, REST / OData based APIs
Competent in C++, LaTeX, Webflow, AWS, MongoDB

WORK EXPERIENCE

Software Engineering Intern   June'22 - August'22
Memorial Sloan Kettering
- Developed multiple Software Robots using **UI Path Studio and Python** to automate varying financial transactions in both classic and modern workflows using the **.NET Frameworks**
- First set of **RPA robots** were constructed to handle **payroll information** for hospital nurses in times of incorrect payroll period entries, paid/unpaid vacation dynamics, and overtime work without requiring human inputs
- Second and final set of robots **managed Insurance claims** for out of state patients. These robots contact insurance companies requesting missing information and process billing claims in the secured MSK Centricity Development Environment
- **UI Path Orchestrator** was used to manage robots, track data outflow, and report exceptional error messages. Cumulatively robots saved the hospital over **1500hrs/year** of manual labor

Research Assistant   August'21 - Feb'22
Lancer Lab, Harvard University
- Used Dual Inverted Selective Plane Illuminating Microscopy **(diSPIM)** to track movement of cellular organelles in response to bacterial stimuli to track movement or organelles in human epithelial cells
- Analyzed **localization changes** by developing a **Java** program that would **quantify organelle movements over 100s of milliseconds** both pre and post bacterial treatment. This program was built in a framework similar to that of Olympus stream but was more personalized to human epithelia cells due to their apical vs. basolateral inversion

Bioinformatics Intern   June'18 - January'20
Weill Cornell Medical College
- Developed a synergistic **drug combination** (Combination Index <1) based on **algorithmic analysis** of drug-drug interactions using **R programming and Chou-Talalay Synergy Indexes** for B cell lymphoma patients
- Defined biostatistical significance using **GraphPad Prism** and **ggplot** from R and analyzed RNA sequencing and Proteomics via R packages **Seurat** and **fsuego**
- Conducted western blots, immunohistochemistry, and both single and multiple cell RNA sequencing to identify specific genetic markers. These markers were further tagged using the R package **Single R**

SELECTED PROJECTS

Daily Dose | dailydoseofnews | Co-founder
- Developed an online platform with that seeks to ease the complexity of novel research advancements by making it more readable for the common reader
- Publishing monthly podcasts that serve as review of the past month and also discuss novel discoveries in healthcare and scientific fields

Python based Chatbot via AI
- Used speech recognition tools provided in Python to create a query that listens, processes, and gives results based on user voice commands. Used **pyttsx3** for **voice commands** such as "Open Spotify" or "Play [Artist name] on YouTube"
- Implemented a **Wikipedia module** that provides in response to user voice commands such as "Elon Musk Wikipedia"

Stock Trading Dashboard - JP Morgan Chase & Co.
- Utilized **Python** to develop a program that fetches current stock prices and compares two chosen stock prices as a ratio. Used that information to followingly develop an interface via ReactJS that visualizes trading opportunities by using JP Morgan's open-source tool, Perspective.

Texting Application
- Developed and deployed a texting application via **ReactJS, HTML, and CSS** that allows for users to create personalized chat boxes via secured accounts
- Users can interact with multiple "logged-in" individuals at the same time and also create multidimensional chat boxes to interact with more than one user in the shape of "group chats"

Weather Information Program
- **Python** based program that fetches weather information from an **API** and outputs multiple variables based on the desired City location

LEADERSHIP ROLES & SKILLS

Residential Assistant — Boston College   August '22 - Present
- Maintaining an ethnically diverse hall of over 55 residents by organizing social events, counseling & advising on academic activities
- Managing building administrative duties: incident reports, health & safety inspections, and roommate conflicts

Treasurer — Muslim Students Association of Boston College   January '22 - Present
- Auditing membership dues, receipts, and club transactions by working closely with Boston College Campus Ministry
- Effectively managing limited funds to organize weekly and monthly event

Parttime Math Instructor — GauthExpert & Takavi Tutors   May '22 - Present
Volunteer — Leukemia and Lymphoma Society   February '19 - February '20
Math and Reading Instructor — Kumon   August '18 - January '20

Languages: English, Urdu, Punjabi, Arabic