

## MAHAM JAMAL

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### EDUCATION

University of Calgary - *BSc. Software Engineering, Minor in Biomedical Engineering*

- Expected 04/2026
- Courses: Programming with Data, Software Engineering Practices Data Management, Data Structures and Algorithms, Object-Oriented Design, Assembly Language Programming (RISC-V), Full Stack Web Development, Operating Systems, Applied Operating Systems

### SKILLS

#### Technical Skills

- Programming Languages: Python, Java, C/C++, MySQL, AWS, HTML, CSS, JavaScript, Node.JS, React.JS, Electron.JS
- Technologies: PICKIT4 Microchip, ESP32, Arduino, MPLAB, Muse2 (Brain-Computer Interface), Git, JUnit, PyUnit, Terraform, Linux, Figma
- Microsoft Office 365, Google Suite

#### Soft Skills

- Strong communication skills, leadership skills, attention to detail, excellent time management and organization skills, technical writing, interpersonal skills, problem-solving ability, creativity, highly motivated

### PROJECTS

**BrainLock (Brainwave Authenticated Mood Tracking Journal)** *ongoing*

*Python, Electron, HTML, CSS, JavaScript*

Team of 5

- Led a interdisciplinary group consisting of 5 members (electrical, biomedical, software) to partially implement a desktop application journal for natHACKS, a 4 day intensive hackathon, using electron.js that recorded mental state at a certain time
- Successfully utilized neurotech BCI (Muse2) to record users brainwave data and use it as authentication for future logins
- Utilized machine learning (SVM library) to improve accuracy of brainwave distinction between different users

**Biofeedback Stepping and Walking Aid - BMERIT** *ongoing*

*Python, Electron, HTML, CSS, JavaScript*

Team of 6

- Helping to develop a multi-faceted device that can measure a variety of metrics including force application throughout device and drag during walking

**Note taking Website** *completed*

*React.js, JavaScript, HTML, CSS, AWS*

Individual

- Developed a full stack web application which allows user to take notes which are stored in a database
- Implemented backed using Terraform and AWS and created 3 lambda functions to allow user to get, save and delete notes

### **The Last Show - Obituary Website** *completed*

*React.js, Terraform, AWS, Python, JavaScript, HTML, CSS*

Individual

- Created Lambda functions in Python for handling GET and POST requests, integrating AWS DynamoDB for data storage and retrieval.
- Interfaced with external APIs including ChatGPT (via Python's requests library) for obituary generation and Cloudinary for secure storage of speech files and images.
- Engineered AWS infrastructure using Terraform, provisioning Lambda functions, DynamoDB tables, and securely managing API keys via AWS Systems Manager Parameter Store.
- Integrated Amazon Polly for text-to-speech conversion

### **Schedule Builder for Wildlife Rescue Centers** *completed*

*React.js, JavaScript, HTML, CSS*

Team of 4

- Heavily involved with the design phase of the project to figure out the best way to go about implementation to ensure all project requirements were met
- Established connection with SQL in java to allow for data to be retrieved from database using optimized SQL queries
- Pair programmed with other group members to work on the logic of the scheduler and develop JUnit tests to ensure functionality
- Key role in debugging during final stages of the project

## **EXTRACURRICULARS**

### **Workshop Mentee- Embedded in Embedded Workshop**

09/2023 - Present

- Soldered PCB with all required hardware components
- Working through self-guided firmware modules to develop API functions in C to control LEDs and a Buzzer with the goal of creating a custom application

### **Member of Software team BMERIT**

09/2023 - Present

- Helped to troubleshoot and figured out connection errors were due to an ESP-32 driver missing
- Helped establish connection to ESP32 via bluetooth using python
- Helping to develop the front end of the application using Electron.JS

### **Media Commissioner TechStart**

09/2023 - Present

- Developed engaging promotional content for a software-focused club, showcasing expertise in communicating technical concepts

### **VP of Marketing Pakistani Students Society**

05/2022 - 03/2023

- Effectively planned marketing strategies with a team of 4 members to increase outreach and audience engagement.
- Led marketing campaigns for 4 major club events. Efforts included making posters, daily Instagram stories and posts, TikToks, Reels, and Event Photography.
- Delegated tasks appropriately amongst the team and followed up with team members to ensure content was released as scheduled.

### **Junior Executive of Marketing Pakistani Students Society**

03/2022 - 05/2022

- Collaborated with the team to design promotional content and increase engagement on social media platforms. Completed all delegated tasks in a timely manner.