Iftier Rahman

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Education

University of Toronto Toronto, ON

Bachelor of Applied Sciences in Computer Engineering, PEY Co-op *Anticipated Graduation Date: April 2027*

Relevant Courses: Digital Systems, Operating Systems, Linear Algebra, Calculus, Software Design and Development, Object-Oriented Programming, Data Structures and Algorithms, Computer Organization, Applied Deep Learning

Awards: Recipient of Amazon Future Engineer Scholarship worth $30,000

Experience

Amazon Web Services May 2024 – August 2024

Software Development Engineering Intern *Vancouver, BC*

- Architected and scaled a distributed workflow orchestration using **AWS Step Functions**, running up to **3,000 concurrent Lambdas** to backfill **350+ million schedules** in DynamoDB with new field across multiple regions
- Deployed and automated workflow orchestration infrastructure using **AWS CDK** and **CloudFormation** in **Typescript**, while leveraging **CloudWatch alarms and logs** to monitor updates, throttling, and failures
- Conducted **canary testing** in different environments using **TestNG** and **JUnit** and implemented robust security and permissions for internal **Java REST API**, ensuring secure, reliable performance across all environments.
- Authored a **comprehensive runbook** documenting the project, including troubleshooting steps, best practices, and monitoring strategies for **on-call engineers**

Amazon Web Services May 2023 – August 2023

Software Development Engineering Intern *Vancouver, BC*

- Developed internal **Java REST API** to list schedules by target for **AWS Eventbridge Scheduler**, utilizing a new target field for **customers** to efficiently retrieve schedules by target.
- Optimized **DynamoDB** data retrieval with a **Global Secondary Index (GSI)** based on the target field for targeted schedules, leading to a **30x** performance increase over filtered scan API calls
- Conducted **unit testing** using **JUnit** and **Mockito** for the internal **Java REST API**, achieving **98% code coverage** and ensuring validation of the API functionality
- Updated existing **REST APIs** to ensure created and updated schedules are populated with the target field in **DynamoDB**, enabling **100%** schedule retrieval of new schedules by the internal API

University of Toronto January 2023 - April 2023

Team lead - APS112 Engineering Strategies and Practice 2 *Toronto, ON*

- **Directed 6 member team** in optimizing high call volumes for Sunnybrook Academic Family Health Team
- Proposed MVP for email and online bookings, boosting patient processing by **70%** over current methods

Projects

ReLive | *HTML, CSS, JavaScript, Firebase, Cohere API, OpenAI API, Python, Google Cardboard*

- Created a VR photo album where users can explore their photos in 360° using Google Cardboard for UoftHacks 11
- **HTML/CSS/JavaScript** used to develop front-end, Panolens.js for VR experience, & **Firebase** for data storage
- Cohere and OpenAI APIs used to suggest songs based on mood and ambiance of a photo

Diabetic Retinopathy Classification | *Python, PyTorch, CUDA, Scripting*

- Utilized **CUDA** on **NVIDIA L4** GPU to accelerate data-cleaning training, and validation on **40,000+** images
- Applied ResNet-152 via transfer learning with custom fully connected layers & dropouts, achieving **84% accuracy**

Pop-up Vaccine Clinic Locator | *HTML, CSS, Javascript, Figma*

- Over **500+ users**, built using **HTML/CSS/Javascript**, designed UI using **Figma**
- Created based on personal experience with long-lines, short-notice of available clinics, & community consultations
- Users enter the first three digits of postal code and are presented with all eligible pop-up and hospital clinics

RookieXplore | *OpenStreetMap API, C++, GTK*

- Led a **3-member team** to develop a map application using OpenStreetMap API, C++, and GTK.

- Used **A*** and **Dijkstra's** algorithm for directions and traveling salesman problem with algorithms visualization

Fioscope | *Java, JavaScript, HTML, CSS, Android Studio*

- Open-source 3D-printed low-cost digital stethoscope based on the Glia project, reducing costs by 80%-90% compared to traditional stethoscopes.
- Built a working prototype for $25 and developed an Android app in Java, enabling medical professionals to use Fioscope to listen, record, and save auscultations via a headphone jack.
- Developed a website providing instructions, source files hosted on GitHub, and resources for building Fioscope.

Super Mario Bros Parody | *C, FPGA, Nios 2 Processor*

- Developed a multi-level Super Mario Bros parody with custom characters on the **DE1-SoC FPGA board**
- Programmed audio and game mechanics using **C**, leveraging double buffering, audio FIFO, and PS/2 keyboard

Technical Skills

Languages: Java, Python, C, C++, JavaScript, Typescript, HTML, CSS, XML, Verilog, Assembly, Bash, Z shell
Tools: AWS, Git, FPGA, CI/CD, Agile, Firebase, APIs, NodeJS, OpenCV, Linux, Scripting, Windows PowerShell
Libraries/Frameworks: JUnit, Mockito, TestNG, NumPy, Matplotlib, Pandas, ReactJS, Pytorch, CUDA