Uzma Ferdous

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EDUCATION

University of Toronto, B.A.Sc. in Computer Engineering *2021 – 2026 (expected)*

- Awarded Dean's Honour List (2021/22 Fall, 2022/23 Fall)
- ***Relevant coursework:*** Software Design and Communication (C++), Programming Fundamentals (C++), Computer Fundamentals (C), Computer Organization (ARMv7), Digital Systems (Verilog HDL), Calculus III
- ***Clubs****:* UofT Engineering Competition Programming Director, Women in Science & Engineering (WISE) Professional Development Marketing Director, UofT Robotics Association Computer Vision Team, ECE Ambassador

SKILLS

Languages	C/C++ • Python • HTML/CSS • JavaScript • Verilog HDL • Assembly (ARMv7) • Java
Frameworks/Libraries	React.js • Node.js • Next.js • Express.js
Tools	AWS • Google Cloud Platform • Firebase • MongoDB • Docker • Git • Jira • Confluence

EXPERIENCE

Orientation Committee Tech Team, University of Toronto Engineering Society *May 2023 - present*

- Collaborating in a **team of 6** to upgrade and add functionalities to engineering orientation website used by **1000+** incoming students with **React.js**, **SASS**, **Express.js**, **MongoDB**, **Redux**, and **Docker**.
- Implemented account verification and subscription system using **AWS Simple Email Service** and JSON Web Tokens.
- Built downloadable 'frosh' event schedule feature using the React PDF library, improving convenience for all users.
- Applying agile software development methodologies through weekly tasks and code review meetings.

Infrastructure & Cloud Operations Intern, Questrade Financial Group *May – August 2023*

- Leveraged **Jira** and **Confluence** to plan and streamline change request workflows and create setup, maintenance, and troubleshooting guides for tools such as Google Cloud Platform, Pure Storage, and other cybersecurity software.
- Managed IP address updates for Cohesity backup services using **Google Cloud Platform** (GCP) and **GitLab**.
- Streamlined CMDB with tools such as Device42, vSphere, and SolarWinds to correct **100+** device inventory records and generate detailed reports for optimizing resource allocation, improving accuracy of asset tracking by **5%**.

IT Intern, Children's Aid Society of Toronto *June - September 2022*

- Configured Checkpoint security software for **400+** devices and kept record of progress using Microsoft Excel.

PROJECTS

'Uzma's Art Shop' – Full Stack eCommerce Website (Link → GitHub) *May – July 2023*

- Designed an e-commerce website for my paintings using **React.js**, **Next.js**, and **Styled-Components**.
- Integrated **React hooks** so users can add products to 'cart' and navigate to checkout page built using the **Stripe API**.
- Used **Google Cloud Platform**, **MongoDB**, and **AWS S3 Buckets** for storing account, order, and resource information with **CRUD** functionalities for features such as product reviews and user favourites.
- Developed a commission request system through **EmailJS** to enable users to directly send commission inquiries.

Scavenger Hunt GIS *January - April 2023*

- In a **team of 3**, created a GIS in **C++** to extract information from the **OpenStreetMaps API** and store street intersections, points of interest, natural features, and transit data from over 8 billion graph nodes.
- Implemented a **Trie** data structure and integrated it alongside **STL data structures** to optimize autocomplete searching and zoom rendering, increasing overall GIS responsiveness by over **20+** frames per second.
- Secured **4th** out of 90 teams on course leaderboard for our 'Travelling Courier Problem' algorithm involving **Multi-target Dijkstra**, **simulated annealing**, and **two-opt** operations, leading to a **4%** better solution than the benchmark.

ARMv7 Battleship (GitHub) *April 2023*

- Developed an interactive Battleship game in **C** for the DE1-SOC board with user interface on the VGA display.
- Utilized the Generic Interrupt Controller (GIC) to handle interrupts from user input for multiple I/O Devices including DE1-SOC board pushbutton keys and switches, and an external PS/2 Keyboard.
- Configured the **A9 Private Timer** to measure and display player turn countdowns and control gameplay animations.