

Iftikher Zaman

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EDUCATION

University of Toronto

Bachelor of Applied Science & Engineering, Computer Engineering (3rd Year)

Toronto, ON

Sep. 2022 – June 2027

TECHNICAL SKILLS

Back-end: C++ (Proficient), C (Proficient), Python (Proficient), JavaScript (Basic), Node.js (Basic), Assembly (Intermediate), GoLang (Basic), Verilog (Intermediate)

Front-end: HTML (Intermediate), CSS (Intermediate), Kotlin (Basic), GTK (Intermediate)

Other tools: Git (Proficient), SQL (Intermediate)

WORK EXPERIENCE

Founder & Software Developer

May 2024 – August 2024

DisputeLens | *GitHub*

Toronto, ON

- Programmed a tool in Python that creates timelines of agreements in multiple emails or threads
- Obtained email contents using the Azure Identity library giving access to all emails in the user's inbox
- Fed email contents into ChatGPT using OpenAI API to generate a timeline of agreements
- Designed the UI using PyQT 5 enabling the user to interact with the back-end code
- Designing the company website in HTML, CSS, JavaScript & Node JS to efficiently convey our value proposition
- Wrote a business plan, calculating cash flow projections, and interviewed 32 homeowners to define and validate our business idea

PROJECTS & HACKATHONS

Haptic Speak | *Kotlin, Google API, Arduino, C++* | *GitHub* | *Devpost*

February 2024

- Programmed an **Android app** using Kotlin that introduces seamless communication for deaf-blind people using vibration in Morse Code
- Integrated **Google Text-to-Speech** and **Speech-to-Text API** for voice to text and text to voice conversion within the app for enabling human's communication side
- Programmed **Text to Morse Code algorithm** in C++ and integrated Arduino with **Qualcomm's HDK 8450 kit** using bluetooth for Morse Code to Vibration (as produced by motors and transistors) and vice versa to complete the haptic feedback
- Won the **Qualcomm's Most Innovative Use of HDK8450 Dev Kits Award** at Make Uoft

Muz Map | *C++, GTK/Glade, OSM API* | *GitHub* | *Slide Deck*

January 2024 – April 2024

- Designed a **Geographic Interface System (GIS)** / map app in C++ with the OpenStreetMap API for Muslims in Canada to navigate Islamic amenities and services around them
- Programmed **A* heuristic** and **Dijkstra's algorithm** to find the shortest path between two street intersections
- Programmed **multi-start, 3pt and simulated annealing heuristic** on top of **Greedy Algorithm**, increasing path efficiency through multiple pick-up and drop-off intersections by 7%
- Designed and implemented a responsive GUI using **GTK** and **Glade**, adhering to industry standards for usability and responsiveness, enhancing user experience and interaction efficiency

Head Soccer Game | *Assembly(Nios-II), C, Game Development* | *GitHub* | *Demo*

March 2024 – April 2024

- Programmed a Head Soccer Game on the **DE1-Soc FPGA** program using C and Assembly utilizing **Intel's Nios-II Processor**
- Wrote algorithms in C to implement **Player vs AI mode**, display realistic game physics, integrate multi-player input from PS2 keyboard, play sound effects, track and display score, time and game state using character buffers on memory mapped VGA
- Utilized **GIT version control**, **Intel Monitor Program**, and **CPULator** (a processor emulator) for code management and debugging

Puzzle Master | *Altera V DE1-Soc Board, Verilog, ModelSim* | *GitHub*

- Developed a Puzzle Game in **HDL Verilog** hosted on Altera-V DE1-Soc Board
- Designed and implemented **16-state Finite State Machines (FSM)** to account for the game-state in every phase of the puzzle, and a complex datapath to execute associated actions in those phases
- Programmed code to receive data from **PS-2 Keyboard**, transfer data to FPGA connected speakers for background audio and transfer image to memory for VGA display

Plant Disease Detection | *PyTorch, CNN, Deep Learning* | GitHub

June 2023

- Developed a deep **Convolutional Neural Network (CNN)** using PyTorch to classify plant health status, species, and disease type from a single leaf image, aimed at aiding farmers in crop disease prevention
- Implemented advanced regularization techniques including **Drop-Out, L2 Weight Decay, and Skip Connections** to enhance model performance
- Achieved an 80% increase in accuracy on the test set compared to classical models like Support Vector Machines (SVMs)

Privacy Saver | *Python (RAKE), HTML, JavaScript* | GitHub | Devpost

March 2023

- Developed a keyword detection tool for the EWB Cyber Ethics Hackathon, utilizing Python's RAKE library to extract and analyze key terms from user agreements, correlating them with historical data breach likelihood
- Integrated HTML and JavaScript for web scraping and content processing and implemented an algorithm in Python to score user agreements based on privacy infringement potential
- Achieved 2nd place out of 17 teams in the cyber security hackathon

UofT Engineering Strategies and Practice (ESP) Projects :

Sidney Smith Hall Redesign | *Project Management*

September 2022 – December 2022

- Led a team as Project Manager in redesigning the east entrance of Sidney Smith Hall at the University of Toronto, addressing safety, accessibility, and social usability issues
- Conducted comprehensive site analysis and user surveys to identify key challenges, including pedestrian flow, accessibility compliance, and social interaction spaces
- Developed a concept design incorporating universal design principles, sustainable materials, and improved lighting, resulting in a 30% increase in usable space and full AODA compliance
- Presented the final design to Christine Burke, Assistant Vice President of University Planning, receiving approval for further development

Chestnut Parking Garage Retrofit | *Project Management, Gantt Chart*

January 2023 – April 2023

- Managed a team of 5 tasked with retrofitting the lighting system of a 50-year-old underground parking garage at 89 Chestnut Street, Toronto, focusing on energy efficiency and ROI
- Conducted energy audits and lighting simulations using DIALux, identifying potential for 60% reduction in energy consumption
- Designed a new lighting layout utilizing LED fixtures and smart controls, projecting an annual energy savings of 150,000 kWh and a payback period of 3.5 years
- Prepared a comprehensive concept design and cost-benefit analysis, demonstrating a projected 25% IRR over a 10-year period