

Faisal Hussaini

Third Year Computer Engineering Student

Mississauga, Ontario

(647) 763-7860

faisal.hussaini@mail.utoronto.ca

SUMMARY

Third-year Computer Engineering student with a background working effectively in dynamic environments. Experienced in object-oriented programming, hardware description languages and front-end web development. A well-organized and collaborative individual with strong communication and analytical abilities.

WORK EXPERIENCE

Unplug, Toronto ON — Design Engineer

Jan 2019 – Apr 2019

- Worked in a team of six to design and propose an autonomous presence detection mechanism for the world's first AI-powered smart plug.
- Developed online surveys to gather consumer data and wrote technical narratives to document processes and conceptual design changes.
- Estimated quantities and cost of materials, equipment and labour to determine project feasibility.
- Conceptually designed a product that met the objectives and constraints originally posed, while successfully increasing cost-effectiveness by 23% and coverage by 31%.

PROJECTS

AI that plays Flappy Bird - August 2020

https://github.com/faisalhussaini/flappy_bird

- Used Python, PyGame and NEAT-Python to create AI that learns to play flappy bird
 - Implemented the game environment using the PyGame module.
 - Used the Neuroevolution of Augmenting Topologies (NEAT) module to create a neural network of bird clones with different weightings, and filtered them using natural selection.

Personal Website - May 2020 - June 2020

<https://faisalhussaini.github.io>

- Utilized HTML 5, CSS 3, JavaScript, Bootstrap 4, JQuery, Node.js, NPM, Git and a Google Cloud API to create this site from scratch.

MyTour: A Tourist GIS comparable to Google Maps- Jan 2020 – Apr 2020

<https://github.com/faisalhussaini/MyTour>

- Designed a mapping GIS in C++ catered specifically towards tourists using data procured from OpenStreetMaps. Used the GTK graphics package and Glade to create an interactive UI. Used Git as a version control system.
 - Used STL and Boost to improve the program's runtime by 240%.
 - Optimized pathfinding by 78% by converting Dijkstra's algorithm into A* to find the shortest route between two destinations.
 - Solved a variation of the travelling salesman problem to compute the best possible route. Used multithreading and randomized two-opt to optimize the algorithm by 85%
 - Implemented a filtering system for POIs, Tourist and Leisure locations to optimize the responsiveness of the GUI by 43%

- **Linkedin:**
 - [linkedin.com/in/faisal-syed-hussaini/](https://www.linkedin.com/in/faisal-syed-hussaini/)
- **Personal Website:**
 - faisalhussaini.github.io
- **Github:**
 - github.com/faisalhussaini

EDUCATION

The University of Toronto,
Toronto ON — BAsC in
Computer Engineering

SEP 2018 - PRESENT

- **Specializations:** Software and Computer Networks
- **Minor:** Business
- **Certificate:** Artificial Intelligence
- **Example Coursework:** Algorithms and Data structures, Operating Systems, Computer Organization, Databases, Networks

TECHNICAL SKILLS

- **Proficient:**
 - C++
 - C
 - Algorithms
 - Data Structures
 - Verilog
 - Git
 - Iterative Design Cycle
 - Agile Development
 - Linux
- **Familiar:**
 - ARM Assembly
 - SQL
 - HTML5/CSS3/JavaScript
 - Java
 - Excel
 - MATLAB
 - Python

CERTIFICATIONS

- **SQL for Data Science**
 - UC Davis
- **Neural Networks and Deep Learning**
 - deeplearning.ai

